# THE CONDOR

## A Magazine of Western Ornithology

Volume XXVII May-June, 1925 Number 3

COOPER ORNITHOLOGICAL CLUB

# THE CONDOR


A Magazine of Western Ornithology

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*Issued May 15, 1925*


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# THE CONDOR

**A Bi-monthly Magazine of Western Ornithology**

**Volume XXVII** **May-June, 1925** **Number 3**

[Issued May 15]

## OBSERVATIONS ON THE XANTUS HUMMINGBIRD

WITH ONE PHOTO

By CHESTER C. LAMB

THE BEAUTIFUL Xantus Hummingbird (*Basilinna xantusi*) was first made known to science through its discovery near Cape San Lucas, Lower California, Mexico, by John Xantus de Vesey in the year 1859. It was named by Lawrence, *Amazilia xantusii* in honor of its discoverer. The habitat of the species is from the tip of Lower California northward to the twenty-ninth parallel, where the birds are rare.

The real home of the Xantus Hummingbird is in the Cape San Lucas region. During the twenty-one months the writer spent in field work in that section he was always much interested in these birds, making observations upon them wherever they were present. The adult male is very conspicuous, with his reddish colored bill and other bright colors. He has a rounded, blue-black head, with a white stripe through each eye, and a bright metallic bronze-green throat, while the under parts are cinnamon rufous. The wings are of a purplish dusky shade and the tail purplish chestnut. The female has a black bill, no black on the head or green on the throat, and the eye stripe is rufous instead of white. The immature male resembles the female, though with slight markings of green on the throat. Size is just about as in the Anna Hummingbrd.

Unlike the Costa Hummingbird, which is seen everywhere from the bleakest islands to the mountain tops, the Xantus Hummingbird does not occur in all parts of the Cape region. The birds were fairly common at San Jose del Cabo from February to August. This town lies just a few miles south of latitude 23, thus being within the tropics. This hummingbird, however, is not restricted to tropical surroundings, for it occurs on the highest mountains in the coldest weather. At San Jose del Cabo it frequents the pomegranate hedges and the shrubbery around irrigating ditches. It is very fond of water.

Xantus Hummingbirds were common from September to December at Todos Santos, some ninety miles north of San Jose del Cabo, on the Pacific Ocean. On the coastal plain between the sea and the Sierra de la Laguna or Victoria Mountains, south of Todos Santos, they are also met with, but sparingly. At La Paz, located sixty miles due north of Todos Santos and on the Gulf of California coast, I saw only one bird in nearly a year's residence at that place. This may be due to the fact that at La Paz there is no surface or running water within miles. Some four miles east of Loreto, in a canyon that comes down from the Sierra Giganta, on the trail to Comondu, many were seen.

At Comondu, about one hundred and twenty-five miles north of La Paz and midway between the gulf and the ocean, Xantus Hummingbirds were met with in numbers, but the real center of abundance is in Laguna Valley, in the heart of the Sierra de la Laguna, situated south of La Paz. These mountains are difficult of access, and it takes two days on mule back, over tortuous trails, to reach Laguna Valley, a small, uninhabited valley at an elevation of about 5500 feet.

The Xantus Hummingbirds radiate out from this valley in all directions, and are very common in all the mountain canyons, right down to the open deserts. One may get into some of the favorable hummingbird localities of California and believe he has seen a great concourse of hummingbirds, but half an hour's walk across Laguna Valley and around the lower rim will astound one at the numbers seen. One day I endeavored in the course of a short morning's walk to count the number of Xantus Hummingbirds, but, going up to two hundred before the first hour, I gave up the actual count and started to estimate. One cannot see this large number of hummingbirds at any hour of the day, however. The very early morning hours are when they appear in the greatest abundance. At this time they come out of the oak and pine forests around the rim of the valley and seek a place to bathe, and also to feed and play around a red flowering shrub that grows along the stream on the floor of the valley.

At the time of the year that these observations were made, in August, 1924, most of the birds seen in the open valley were males, adult and immature, the females being busy within the forests with their nesting duties. From observations here and elsewhere, I do not think the males attain full adult plumage until the second year.

At one place the hummingbirds' bath was discovered, where a trickle of water flowed over a flat rock a short distance and then dropped in a tiny waterfall. At one time I counted nine birds at once taking a bath. They would sit in the water and give themselves a thorough shower with their wings; then, to finish off, they would fly against the falls, breast first, and then they would back up to the falling water. Besides the birds busily bathing, there were as many more sitting around on the bushes, drying themselves.

Towards dark, in the winter time, the adult males have a habit of perching on some dead twig, and there, remaining motionless for a considerable period, give themselves up to song, uttering at regular short intervals their quite pleasing little tune. During the heavy tropical rains of that region the hummingbirds would disappear, but the minute the rain ceased they would be out again. These birds love the pines and live oaks of the high mountain regions, and are to be seen at all hours of the day hunting around those trees for the minute insects that constitute their food.

They seem to be of gentle disposition, though they do not permit the too close proximity of another species while feeding or at their nests. They are tame, but not so much so that the brooding female will ever allow a person to touch her. At most any time, a little squeak will bring one or two birds buzzing around one's head. When I had my work table out under the oaks the hummingbirds seemed much interested in my work, buzzing around the table and inspecting my instrument box. I had a fluff of cotton hanging nearby, which they soon learned made excellent nest building material.

My first visit to the Sierra de la Laguna, July 4 to August 7, 1923, was unproductive as regards learning anything of the nesting habits of the Xantus Hummingbird; for search as I would and watch as I would, no nest but an old one was found. Neither did I find any nests at San Jose del Cabo. The following year, however, I had better luck, first at Comondu and later in the Sierra de la Laguna. Mrs. Lamb and myself were at Comondu from March 30 to April 11, 1924, and during that

interval twelve nests were discovered. At this altitude, 800 feet, the birds must start nesting early in February, as all but three nests contained large young or eggs about to hatch. I would not be surprised if they raised two broods annually at Comondu, though I did not stay long enough to prove the fact or to learn the period of incubation.

In their courting, the male Xantus Hummingbird does not fly up in the air and make the parabolic dive that the Costa Hummingbird does, but there is considerable chasing by individuals of one another around through the trees. The nesting birds of Comondu, where there are no oaks, have an entirely different style of nest building from those of the oak regions of the Sierra de la Laguna. The Comondu birds are not particular as to what kind of a tree they select in which to build their nests. The nests are usually placed low above the ground, and they are always very close to running water.

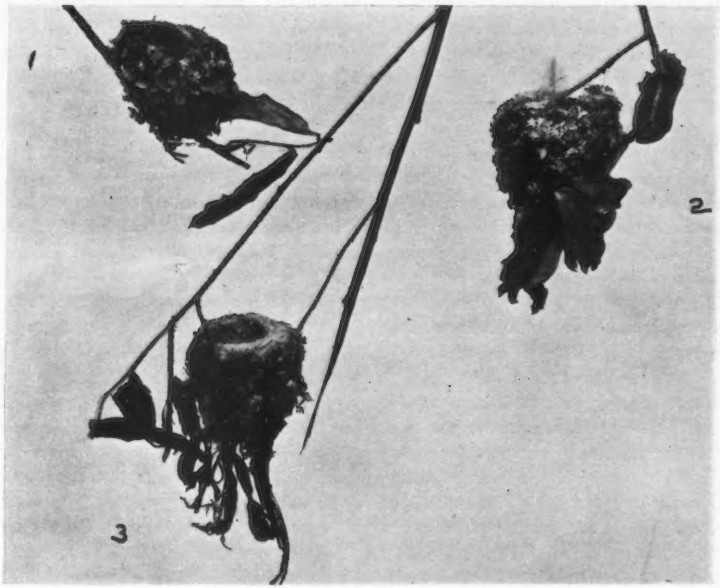



Fig. 21. NESTS OF THE XANTUS HUMMINGBIRD.
1 and 2 from live oaks, Sierra de la Laguna, and covered with lichens; 3 from Comondu, covered with shreds of bark.
Photo by Laurence M. Huey,
Courtesy of San Diego Museum of Natural History.

In the Sierra de la Laguna (Laguna Valley), nests are always in live oak trees, not necessarily near water. I made diligent searches in the pines and white oak trees, which, especially the latter, are much more abundant than the live oaks, but discovered no nests. Nearly all the nests found were hung at the ends of small twigs, from four to six feet from the ground, in very small live oaks. Two exceptions were nests found twelve feet up in large oaks.

At Comondu I noted two exceptions to the usual method of suspending nests to twigs. In one case a nest was found saddled to the dry spike of a date palm tree, and

another was saddled on a dead limb of a fig tree. Other trees in which nests were found at Comondu were avocado, olive, lemon, orange, water willow and cottonwood.

The nesting material of the Comondu birds and the Laguna birds was about the same, the nests being composed of fine plant down, dried flower heads, plant fibers and small feathers, all bound together with spider webbing. Nest number 3 (figure 21) is covered on the outside with strips of bark of the water willow. Without exception all the nests of the Sierra birds are beautifully decorated with lichens from the oaks (1 and 2, figure 21). The Comondu birds do not decorate their nests with lichens, these not being available, but sometimes they do attempt a little decoration with bits of bark or leaves.

The nesting dates of the Laguna birds are also different from those at Comondu. We arrived in the Sierra de la Laguna on June 16 and remained until July 7, and in that time no nests were found, though I am not sure that the birds were not nesting. August 3 I re-visited the mountains and remained in Laguna Valley and vicinity until September 3, and in this month discovered twenty-five nests. On September 1 I found a nest just ready for eggs. Of those found, the greater number contained young or heavily incubated eggs, so it might be said that the nesting season in Laguna Valley started about the middle of July and continued to the middle of September. On one occasion, when a nest was found just started, I hung a fluff of cotton nearby and the bird finished the nest entirely of this cotton, decorating the outside with lichens. She then laid one egg. At this time a raven, that arch enemy of all birds, interfered and destroyed the nest and egg. Ravens were very common in the valley and if a person ever went to a nest when a Raven was in sight it meant certain destruction to the nest. One was caught in the very act of destroying a hummingbird's nest that I had just examined.

I could find no evil effect upon the nests from the almost daily heavy tropical rains that lasted from one to three hours. As with our Californian hummingbirds, the number of eggs laid is usually two. I found several nests with one heavily incubated egg and also some nests with one young, but I cannot state definitely that two eggs were not originally laid and one destroyed. Neither did I learn the time it took for the eggs to complete incubation, for here again the Ravens interfered. It may be that frequently one egg constitutes a normal set for the Xantus Hummingbird.

The eggs are white, of course. Measurements would not mean much, as the eggs differ much in shape, some being oval, others elliptical. The nests, too, are of different sizes, the outside measurements of some being much larger than others. The Xantus Hummingbird makes a very handsome nest, bulkier than that of any other hummingbird of the same size in the United States.

*Los Angeles, California, January 29, 1925.*

## THE COURTSHIP OF THE BRANDT CORMORANT

By CHARLES W. TOWNSEND

AS NEITHER Dawson in his "Birds of California" nor Bent in his "Life Histories" has anything to say about the courtship of the Brandt Cormorant (*Phalacrocorax penicillatus*), I have ventured to report the following observations made at Pacific Grove, California, nearly all at the rocks close to the Hopkins Marine Station of Stanford University. I devoted about two hours on each of three days (February 20, 23 and 24, 1925) to this study, using 8-power prismatic binoculars from a distance of about forty to sixty yards.

Although most of the time of these cormorants on the rocks was occupied in preening their feathers and in sleeping, they would now and again engage in more or less complicated courtship actions. The most complete of these, which I witnessed several times, went as follows.

Two birds, presumably males, in the presence of a third, which, by appearance of indifference and of slightly smaller stature I judged to be a female, would suddenly dart open bills toward each other, the upper mandible of one and the lower mandible of the other entering his rival's mouth. Then each, with bills closed, stretched his head up, when the blue of the gular pouch—hitherto invisible—would flash out with great brilliancy. They would hop up and down once or twice, bow toward each other and again stretch up their heads and make the blue gular display. This seemed to be a fairly complete performance and it was often repeated in part or in full and in varying order. It was often limited to the up-stretching of the head and the display of the blue. Once, two, who were facing each other, turned their heads and necks, and, in perfect time, bowed toward the left until their bills touched the rock, then stretched up and displayed the blue and then simultaneously bowed and touched the rock on the right. It was a very pretty illustration of display and dance. Song, also, may have been included but I could not hear it.

When the light was poor and the birds passive I was generally unable to see the gular blue, although I could see the buffy edging; but during display, even in poor light, the blue seemed to flash out vividly. This flash was, as a rule, but for a moment; but it sometimes lasted several seconds. In bright sunlight the blue could sometimes, but not always, be seen in the passive ones, but the color seemed less vivid and less extensive. There was every appearance of the inflation or pushing out of the gular pouch during the display. In one case, seen in good light, the gular pouch during the display appeared to lie in longitudinal folds. In this case the mouth was slightly open and vibrating, and the vibrations were communicated to the gular pouch and to the white plumes standing out from the sides of the neck. Owing doubtless to the noise of the waves and of the gulls, I could not detect any sound. When the vibrations ceased, the blue of the gular pouch almost disappeared and seemed to be replaced by the buffy edgings. This bird was facing a quiet and apparently smaller bird, who voided at the height of her partner's excitement. This action on the part of the passive bird I noticed several times. It seemed to emphasize her show of indifference, but may have been merely the result of nervousness.

Several times I saw a bird flap its wings vigorously and immediately afterward stretch up its head and display the blue. Occasionally a bird would bow its head with neck curved, display while the head was low, and continue to display as it slowly raised it.

Most of the instances I have related seemed to involve rival males displaying before a female, and I have assumed this to be the case perhaps without sufficient evidence. There were other cases, however, where two, looking like a pair and sitting side by side, would suddenly bow and stretch up their necks and display. In birds where there is no difference in plumage between the sexes, the courtship act is often performed equally by both.

*Boston, Massachusetts, February 26, 1925.*

# SOME MORE NOTES ON SASKATCHEWAN BIRDS

WITH ONE PHOTO

By H. H. MITCHELL

AS MIGHT BE expected in this comparatively new province, several interesting ornithological finds have come to hand since my last notes appeared in the CONDOR (XXV, 1923, p. 159). The few birds listed beyond are all included (some hypothetically) in the provincial bird list recently published, with the exception of the Hudsonian Curlew. That species was unexpected so far inland and no information whatever on its occurrence in the province was available.

The spring migration of 1924 was a late one, apparently owing to continued north winds and chilly weather. On May 22 I commenced my collecting at the north end of Last Mountain Lake (Imperial Beach) with Master Bert Lloyd as assistant, whose vigilance, I might here say, was responsible for our first locating the Hudsonian Curlews. The lake is approximately fifty miles long, with an average width of two miles, lying north and south, and surrounded for the most part by treeless prairie. The south end (twenty-five miles north of Regina) I had not found previously a favorable migration ground; but at the north end I found conditions far more interesting, which suggests that birds traveling in their usual northwesterly direction strike the lake toward its northern end.

My note book under date of May 25 reads: "Still cold, wind N, frosts at night. Take a Forster Tern (from among Common Terns), a young Horned Lark nearly full grown, a Snow Bunting, and Tennessee, Myrtle and Yellow warblers. Find Ring-billed Gulls have eggs mostly incubated; a large compact colony of these on long, sandy point. Common Terns have eggs mostly fresh; a few pairs of California Gulls appear to be building on island near Ring-billed Gulls. Saw several swans on lake, well out. Sandhill Cranes in great numbers soaring and circling very high up, but working northward; many Black-bellied Plovers and a few Golden Plovers appear to be in fine plumage. Bert finds two or three Bonaparte Gulls lying on beach, apparently dead a week or so; Turnstones appear to be more plentiful than previously noted."

On the evening of May 27 we discovered an interesting roosting ground in a small, low, stony island about 500 yards off-shore. It was dusk when we were passing this island on our return to camp, and hearing a commotion among some terns, we headed in to investigate. As the boat approached, hundreds of Turnstones, comparatively tame in the failing light, flew off, most of them returning in a few minutes to alight on the far side of the island. A few Black Terns and Common Terns, bent on getting settled down for the night, kept up a continual noise. As we drew away to watch proceedings, flock after flock of Turnstones, with smaller numbers of sandpipers (Least, Baird and Pectoral, as near as we could tell), arrived every few minutes until the island was literally covered. As I had previously noted the Ruddy Turnstone as uncommon, I was surprised to see them in such numbers here.

A few Snow Buntings were seen as late as May 30, and a Lapland Longspur was taken on May 31; the Black-bellied Plovers and Turnstones were still there, though in less numbers, on June 5, when we left.

From June 11 to 24 we were in the Moose Mountain district, part of that time being camped on the north shore of Rocky Lake. This district, southeast of Regina, is hilly and well wooded with innumerable sloughs and small lakes. On one small island in Rocky Lake we found a joint colony of Great Blue Herons and Double-crested Cormorants nesting in old, mostly dead, birch trees. The herons' nests were

highest up, the less bulky nests of the cormorants below in the same trees. It was interesting to note that most of the herons' nests contained nests of the Bronzed Grackle, built into the sides or underneath. The Grackles were busy feeding their young at that time; some of the cormorants and herons also had young.

On another smaller and very low island a pair of Canada Geese had nested; two addled eggs and shells of two others that had been hatched remained in the nest, which was built in the center of the island. At the water's edge on the same island we found on June 16 a nest of the Loon with two heavily incubated eggs; but most of the

Fig. 22. NESTS OF DOUBLE-CRESTED CORMORANTS AND GREAT BLUE HERONS IN BIRCH TREE ON AN ISLAND IN ROCKY LAKE. NOTE BRONZED GRACKLE IN UPPER LEFT-HAND CORNER. PHOTO TAKEN JUNE 16, 1924.

numerous Common Loons we saw in the district had downy young with them at that date. It was interesting to watch, through the field glasses, the parent birds feeding their two tiny chicks.

It was in this locality that I was glad to get a specimen of another bird that is rarely seen in this province, the Crested Flycatcher. Baltimore Orioles were quite

common, several pairs of Purple Martins were found nesting in holes in trees, and Black-billed Cuckoos were frequently seen or heard. If the latter birds are partial to a diet of caterpillars they were then in clover, as the American tent caterpillars were a pest at the time we left there.

**Sterna forsteri.** Forster Tern. A male taken May 25, 1924, the first specimen to be recorded for the province so far as I know. Another, a female, was taken in the same locality, Imperial Beach, on July 26, 1924, by Bert Lloyd.

**Anas rubripes.** Black Duck. Mr. R. Lloyd tells me he saw a Black Duck, taken by a local sportsman at Imperial Beach in October, 1924, which constitutes the third known record for Saskatchewan.

**Querquedula cyanoptera.** Cinnamon Teal. A male that was taken south of Moose Jaw by Neil Gilmour, May 22, 1923, is the first specimen recorded in the province that I know of.

**Micropalama himantopus.** Stilt Sandpiper. One taken at Imperial Beach, May 23, 1924, from a flock of nine. On May 29 another flock of twelve was seen in the same locality.

**Calidris canutus.** Knot. Three were secured, of five seen, at Imperial Beach, May 27, 1924. These are the first I have seen in this province.

**Limosa haemastica.** Hudsonian Godwit. A male and female were taken May 22, 1924, at Imperial Beach, the only ones seen. They are apparently rare here.

**Numenius hudsonicus.** Hudsonian Curlew. One, a male, was taken from three seen; these were very wild. They constitute the only known record for this province.

**Falco islandus.** White Gyrfalcon. One was taken at Indian Head, December 25, 1897, by G. Lang. This sole record for Saskatchewan was only recently "dug up" in the shape of a much battered mounted specimen.

**Tyto alba pratincola.** American Barn Owl. A mounted specimen was discovered in the shop of a local taxidermist, taken at Aylesbury, May 5, 1924. Previous to this there was a sight record of one being seen at Indian Head in 1910.

**Cryptoglaux funerea richardsoni.** Richardson Owl. At the present time our only record is of a specimen taken at Mistatim, February 25, 1923.

**Melanerpes erythrocephalus.** Red-headed Woodpecker. One that was taken June 22, 1924, near Eastend, makes the second specimen from that locality secured by L. B. Potter.

**Myiarchus crinitus.** Crested Flycatcher. A female that was taken June 20, 1924, in the Moose Mountain district is the only specimen I know of for the province.

**Cyanocitta stelleri annectens.** Black-headed Jay. A specimen, apparently referable to this subspecies, was taken by G. Lang near Indian Head, May 24, 1923. Subsequently Mr. H. Fields of Regina reported having seen one in the Qu'Appelle Valley in November, 1924.

**Melospiza georgiana.** Swamp Sparrow. While engaged in bird-banding, Bert Lloyd trapped a male at Davidson, October 1, 1924. It is now mounted in the museum, as but few specimens have been available.

**Spiza americana.** Dickcissel. Three pairs seen and a male taken at Lake Johnston, June 20, 1923, by H. McCrae. This species was rather to have been expected farther south, near the Manitoba-North Dakota boundaries, as it is apparently not uncommon in the Turtle Mountain region.

*Regina, Saskatchewan, December 19, 1924.*

# PHOTOGRAPHING THE RUFOUS-CROWNED SPARROW

WITH FOUR PHOTOS

By ROGER SIMPSON

ON May 4, 1924, while in the Berkeley hills, just east of the new Claremont sub-station, I happened upon this opportunity of photographing an uncommon bird, which like so many others was just a matter of luck. I was making the rounds of several birds' nests that I had under observation to photograph, and while crossing over a rather bare ridge my attention was attracted by the hungry calls of young birds. Following up these calls I located four fledglings scattered over a radius of about twenty feet. Although the grass was short they were very difficult to see on account of their protective coloration, which is so perfect in the juvenile plumage. Soon the parent birds arrived and I could then identify them as Rufous-crowned Sparrows (*Aimophila ruficeps ruficeps*). The field mark of identification which distinguishes them most readily from the Chipping Sparrow is the dark stripe running from the base of the bill down each side of the throat. This can be seen in figures 23 and 26 of the accompanying set of photographs.

23

24

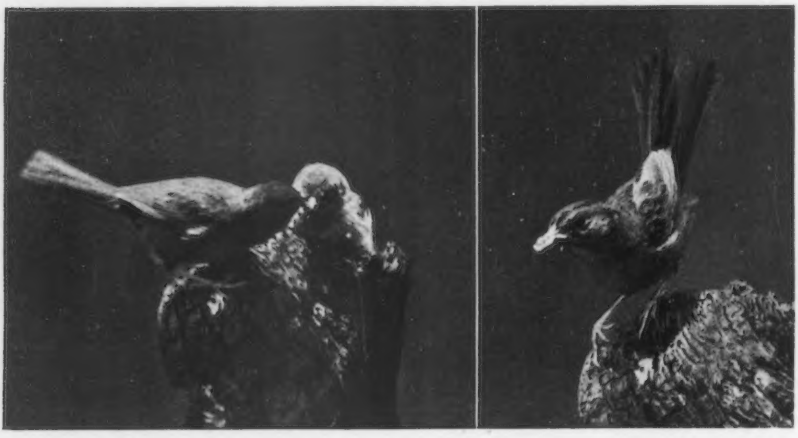
Fig. 23. ADULT RUFOUS-CROWNED SPARROW WITH FOOD FOR THE YOUNG.
Fig. 24. YOUNG RUFOUS-CROWNED SPARROW JUST OUT OF THE NEST.

Having caught the young, I decided to use them to decoy the old birds to some convenient perch where I could photograph them. To do this I fashioned a bag out of a handkerchief, put the fledglings in this and hung it on the selected stump upon which I focused the camera. The next step was to wait at the end of a thread attached to the shutter release. Attracted by protests from within the handkerchief, the parents were soon upon the scene with food, scolding with all the epithets of bird-dom and vociferously attacking the camera. It was during this scolding that figure 26 was snapped.

The adult birds looked very much alike. It was only by the difference in their actions that they could be told apart. One of them was of a quieter disposition and was much less concerned at my intrusion. This bird I took to be the male. Their

most characteristic call was a very loud, clear *r-r-rup, chur, chur chur chur.* This had good carrying qualities and could be heard for quite a distance. Even the presence of food in the bill did not interfere, as they were scolding constantly while bringing food to the young.

After taking several exposures I put one of the fledglings on the stump and within a few seconds the female was there with food. After making sure that he was unharmed she shoved a white grub down his throat (figure 25). As nearly as I



25 26

Fig. 25. MRS. RUFOUS-CROWN SHOVING A WHITE GRUB DOWN HER NESTLING'S THROAT.
Fig. 26. EVEN FOOD IN HER BILL DID NOT INTERFERE WITH SCOLDING. THE PECULIAR POSITION OF THE TAIL IS DUE TO A GUST OF WIND.

could make out, the food consisted mostly of white grubs and small caterpillars, with an occasional black insect or tiny butterfly.

Thus, by playing upon the parental instincts I was able to get pictures of an elusive and somewhat uncommon bird, such as otherwise would not have been possible.

*Berkeley, California, December 18, 1924.*

## NESTING OF THE ALLEN HUMMINGBIRD IN GOLDEN GATE PARK

WITH FOUR PHOTOS BY YNES MEXIA

By HAROLD C. BRYANT

HERETOFORE I have believed along with others (see Bowles, CONDOR, XIV, 1912, p. 77, and Dawson, The Birds of California, II, 1923, p. 927) that the favorite nesting place of the Allen Hummingbird (*Selasphorus alleni*) is the tangle of berry vines along a stream. But a recent experience in Golden Gate Park, San Francisco, has led me to alter my view. A University Extension class in 1923, at my suggestion, spent considerable time searching berry vines for hummingbirds' nests in the Chain of Lakes district in this park, but was rewarded with only two nests—one located high in a cypress tree and the other in a eucalyptus tree.

Last spring (1924) the same class attempted a habitat key and consistently worked the various plant associations of this same district. On April 19, a trip through a growth of cypress and Monterey pines netted eleven hummingbirds' nests, all, with the possible exception of one, being those of the Allen Hummingbird. Three of the nests found were in pine trees; all the rest of them were in Monterey cypress. The lowest one was about 5½ feet above the ground, the highest, 15 feet. Measurement of the inside diameter of two nests showed them to be 1¼ to 1½ inches. Most of the nests contained eggs, but in one instance young birds ready to fly were found. In fact, one of the young birds launched out of the nest and had to be replaced. At least two nests were incomplete. One of these a week later was found to contain eggs.

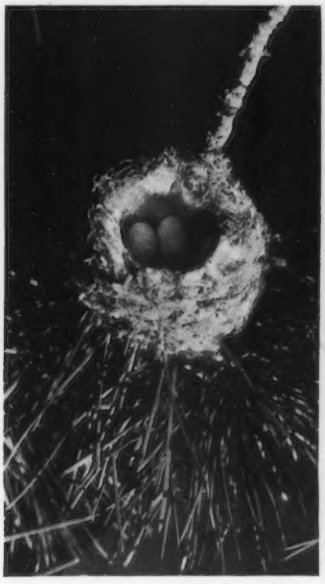


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Fig. 27. NEST OF ALLEN HUMMINGBIRD IN PINE TREE. THIS NEST WAS DECORATED WITH ACACIA BLOSSOMS FROM A NEARBY SOURCE. CHAIN OF LAKES, GOLDEN GATE PARK, SAN FRANCISCO, MAY 4, 1924.

Fig. 28. ALLEN HUMMINGBIRDS A FEW DAYS OLD. TYPICAL NEST PLACED IN MONTEREY CYPRESS SIX FEET FROM GROUND. NOTE THE SITUATION BENEATH A SHELTERING LIMB.

In most instances the incubating female, frightened from the nest, helped in determining the location. On one area of less than an acre in extent, an unsystematic search disclosed five nests. In one instance nests were hardly 15 feet apart. Another casual search on April 26 disclosed three more nests on this same limited area, and undoubtedly several more nests could have been found had each tree been searched systematically. On May 3, in another group of cypresses, occupied nests were found in adjoining trees, and a third nest was situated in a tree not more than thirty feet away.

Although male Allen Hummers are very abundant in the willows surrounding the Chain of Lakes, it is seldom that a female is seen in this situation. On the other hand, in the coniferous forests only one male was seen, but females were much in evidence. In the instance of the small area with its eight nests, the loafing place of males was hardly 200 yards distant.

When we stop to think that the Rufous Hummingbird, a close relative, breeds commonly in coniferous forests of northwestern North America, it does not seem unreasonable that the Allen should choose a similar habitat in the humid coast belt of California. And evidently it was choice in this instance, for extensive tangles of berry vines near water were close at hand but were not chosen for nesting places.

29 30

Fig. 29. A SINGLE ALLEN HUMMINGBIRD IN THE PINFEATHER STAGE. NEST BUILT IN EUCALYPTUS TREE.

Fig. 30. TYPICAL NEST OF ALLEN HUMMINGBIRD IN CYPRESS. THE BIRD ON EDGE OF NEST TOOK ITS INITIAL FLIGHT SOON AFTER THE PHOTOGRAPH WAS TAKEN.

Judging by the number of male Allens, one is convinced that the bird is an exceedingly common breeder in Golden Gate Park. But even from this point of view it was surprising to find the nesting so concentrated in one particular area. In this instance one could almost speak of a colony of nesting Allen Hummers, for some of the truly colonizing birds do not build their nests any closer together than had these hummingbirds in this particular area. G. K. Snyder recorded the finding of eleven nests on Catalina Island in the search of thirty trees (Condor, XVI, 1914, p. 182), so this sort of nesting is not wholly unusual.

After this experience the class and myself are convinced that cypress trees form a very common nesting site for Allen Hummingbirds in the San Francisco Bay region and that numerous nests may be concentrated within a small area.

For the accompanying photographs I am indebted to a member of the extension class, Mrs. Ynes Mexia.

*Museum of Vertebrate Zoology, University of California, Berkeley, December 10, 1924.*

# A REPORT ON THE BIRDS OF NORTHWESTERN ALASKA AND REGIONS ADJACENT TO BERING STRAIT. PART III

WITH TWO PHOTOS

By ALFRED M. BAILEY

POMARINE JAEGER. *Stercorarius pomarinus.*

Our records for this species were not numerous for the summer and fall of 1921, six birds only being taken; two of these were birds of the year. Several were seen at Whalen, Siberia, July 12, and one was collected. Two were noted around the *Bear* off Cape Halkett, to the eastward of Point Barrow, on August 10. They were scarce in the vicinity of Wainwright; two adults were collected September 3, and two young on the 19th and 23d, respectively, the last bird being found dead upon the beach. These were following the coast line southward, in a direct course as though they were migrating.

In the spring, this species appeared abundantly at Wainwright and proved to be a common summer resident. The first arrival was noted on May 26, and on the 28th several flocks of twenty or more were observed. Hendee states that they were very common early in June, over the lead, usually flying in pairs, moving north in numbers with a south wind, and south in lesser numbers with a north wind, but always, apparently, merely passing. On June 21 a few were seen which appeared to be located for breeding, and on June 29 a nest with three eggs was found. On July 1, two nests, with one egg each, were taken. The nests were placed on hummocks of moss on the tundra and were lined with a few feathers, there being no effort at concealment. An immature was taken on August 11.

The first of this species at Wales was recorded on May 29, and on June 3 a great many were seen offshore, migrating over the pack. There was a large migration on June 16, and pairs of birds were noted commonly throughout the rest of the month and during July. The natives told me that the "big tundra hawks" occasionally nested, but I found no eggs. Both color phases were taken, and at Wainwright the darker phase seemed to be about one in twenty.

In 1924 Mr. Brower sent us a good series of eggs from Point Barrow and remarked upon the abundance of Pomarine Jaegers there during the season. He stated that lemmings were very numerous and that jaegers were plentiful for that reason.

PARASITIC JAEGER. *Stercorarius parasiticus.*

This species proved to be the most abundant of the jaegers at Wainwright in the fall of 1921, and it was noted quite commonly during the whole summer at the different points which we worked. Hendee saw a few birds on St. Lawrence Island the first week in July, and a few were seen in the vicinity of St. Michael about the 20th of that month. Curiously, of the many jaegers seen at Nome, none was of this species. I did not note them to the eastward on our trip to Demarcation Point. Our first record for the Arctic was made August 21, when a dark-plumaged bird was taken by Hendee at Wainwright. Birds of dark and light phase were both observed practically daily throughout August and up to the 19th of September, when I collected the last one which we recorded, a bird of the light phase. No birds of the year were observed.

The Parasitic Jaegers were next in abundance to the Pomarines at Wainwright the following season. It was the last of the three species to arrive, the first Hendee noted being on June 26, when three specimens were taken. No nests were found, although they were unquestionably summer residents. About one in three of these birds observed were in the dark phase, while with the Pomarine, the average was about

one in twenty. This species was rare at Wales, the first being taken on July 1, and a few being seen during the following week. The natives did not differentiate between this and the next species, so I could get no information on their nesting.

LONG-TAILED JAEGER. *Stercorarius longicaudus.*

This species is the most abundant of the Jaegers along the northern Alaskan coast and was met with at practically all points visited; yet, strangely enough, we did not observe a single individual during the two months of the open season at Wainwright. We found the species common at Nome, where a fine series was collected about the middle of June. These "tundra hawks" were the most conspicuous of the birds to be seen about Nome, flocks of half a dozen often working over the level tundra; but we failed to locate nests. Hendee noted several at St. Lawrence Island the first week in July and I saw one at Emma Harbor, Siberia, on July 3. A few were seen at St. Michael July 19 to 23, and they were common at Teller on the 29th. Several were observed at Cape Blossom August 1, a few at Point Barrow on August 7, and one at Demarcation Point on August 15.

In the spring, Hendee found these jaegers rare, the first specimen being caught in a trap on June 9. They were seldom seen, although there were a few days when considerable numbers drifted southward. One egg was secured at Wainwright. This species, like many others, is probably rare in a given locality, while a few miles farther on it may be found in considerable abundance.

At Cape Prince of Wales the first arrivals were noted on May 28, after which date they were common. They nested on the tundra along Lopp Lagoon, and a few eggs were secured, the nest being a mere depression in the moss on a tundra mound. These are among the most predaceous of the northern birds, and pairs of them are often seen cruising back and forth over the flats, searching for eggs, young birds, and rodents.

IVORY GULL. *Pagophila eburnea.*

On October 24, while on the way to Barrow by dog team, we skirted the coast for miles. Between Wainwright and Atanik we saw several of these beautifully plumaged birds, shining like wet ivory against the dirty shore ice. They followed up the beach, working along the edge of the slush ice, circling back now and then, but finally disappearing far ahead. On October 30, at Barrow, I had an interesting day with the Ivory Gulls. The sea was clear except for masses of old ice which lined the beach and drifts of pan ice offshore, while the sun shone from a cloudless sky, making an ideal day for observation. Ivory Gulls could be seen working along the large leads of open water, flying north, while, in the meantime, other bands were working to the south. In general flight they were impossible to distinguish from Ross Gulls, having the same habit of circling and suddenly dropping near the surface of the water. Even their general build is similar, although, of course, the Ivory Gulls are much the larger. When within gun range, they are easily identified.

It was very cold and I noticed my feet would not stay warm, even when I was walking up and down; clouds of steam arose from the water, and cracks formed in the snow. I tried decoying the birds from the distance by waving a handkerchief, and succeeded in shooting seven, of which my dog would bring in only four. The government thermometer registered eighteen degrees below zero. I hesitate to make estimates of the birds noted in flight, especially as they seemed to be going up the coast and then returning; but it seemed to me there were at least one hundred examples in the near vicinity. The sea froze over for a long distance out during the night, and only three birds were observed the next day, the last records for the year. Mr. Brower told me that Ivory Gulls do not appear commonly at any time, but that they are seen more often in the spring than in the fall. The nature of the climate in the

Arctic is such that it is practically impossible for a field man to work on many of the winter days. The ice forms on a boat so quickly that it is impossible to use one; young ice usually extends from the shore too far out to make it possible to shoot successfully from the beach; and, finally, it is really cruel to allow a dog, no matter how ambitious he may be, or how rare the specimen, to go out after them. The birds I collected were taken within one hundred yards of the station, and between retrieves it was necessary to thaw out the dog by the big heater and rub him dry, as the ice formed solidly in his wiry coat. No better example of the necessity of a dog may be given than that out of five Ivory Gulls and seventeen Ross Gulls which I collected during the fall, only two of the Ross Gulls could have been secured without the services of the dog. I venture to say that he retrieved over fifty percent of our water birds for us.

The first Ivory Gulls of the spring were seen at Wainwright on May 18 over the whaling camp, seven miles out on the ice. This rare species was often abundant when the Eskimos were "cutting in" whales recently killed. The most of these birds were seen between May 22 and 27; so, had bad weather prevailed, this form might have been overlooked. Of the seventeen specimens taken, but one was in the immature plumage. Hendee states: "These gulls were less wary than the Glaucous Gulls. They seldom came within shotgun range, however, unless attracted by food, seemingly having little curiosity. Their note was similar to that of the Arctic Tern."

The Point Barrow Expedition of 1882-83 reported the Ivory Gull "at best a rare visitor". I believe, however, that this species can be looked for regularly, far offshore, especially when whales are killed.

My spring work at Cape Prince of Wales and upon the ice-floes of Bering Strait proved of interest, especially as I found the Ivory Gulls to be fairly common, thus extending their regular range to Bering Sea. As the ice breaks up in the spring and starts moving through the Strait these beautiful gulls appear, working far out over the shifting ice fields. It seems they must winter in numbers at the edge of the pack, possibly feeding along the open leads to the northward of St. Lawrence Island, for, as the ice opened at Wales, these birds appeared from the south, drifting northward with southerly winds. I saw the first one on May 8, and the Eskimos reported many of them on May 16 and 18. When hunting seals on May 22, I saw between twenty and thirty, of which I collected nine as they hovered over the bloody carcasses. On May 28 several were seen. According to my notes: "The Ivory Gulls were feeding on the refuse where the Eskimos skinned a walrus the other day, and in spite of their beautiful plumage there was something unattractive about them. Their feet were loaded with slime and they walked heavily about, looking disgustingly like white buzzards. I watched them quite a while before collecting them, as they were very tame." A few birds were seen almost daily during May and the first two weeks in June, when weather conditions were favorable for hunting; but they were not numerous in June, merely an occasional straggler being seen. The last specimen was secured on June 26.

No better example than the collecting of Ivory Gulls can be given to show the necessity of the northern collector hunting with the natives. Gulls and other rare stragglers are only taken offshore along the open leads. Hendee accompanied the whale hunters seven miles out on the sea ice, and so made his interesting notes. Many collectors have failed altogether to make observations of certain species, or considered them rare, because there were few natives about to assist them.

PACIFIC KITTIWAKE. ***Rissa tridactyla pollicaris.***

Abundant throughout the islands of Bering Sea, nesting along the precipitous ledges in great numbers in company with murres, cormorants, puffins, and auklets.

Many kittiwakes were noted at sea when we were abreast of the Pribilof Islands on June 16; and we found them to be abundant at King Island and at St. Lawrence Island where they were already nesting. I saw many on their eggs along the cliffs below Sivunga on July 8, and flocks were seen daily at Emma Harbor between July 1 and 7, although I do not know where they were nesting. They were extremely abundant at Whalen, near East Cape, July 12, feeding on a small shrimp along the ice-floes which lined the beach; great flocks of them would rise at one's approach, only to sail on ahead and alight again. Many were seen at St. Michael from July 18 to 23 and at Cape Blossom on August 1, while a few were noted at Point Barrow August 8,

Fig. 31. WALES ESKIMO WITH IVORY GULLS, FAR OFF-SHORE IN BERING STRAIT; MAY, 1922.

and at Cape Halkett on the 10th. Several hundred were seen flying north at Wainwright on September 2; at Icy Cape between the 5th and 7th many were observed, the main migration to the south evidently being September 7 when hundreds were flying offshore, usually skimming close to the surface of the water. Many more were seen the next day; but three days later, when we made a fifty-mile trip in a whale boat, not a bird of this species was observed, so it seems that most of them move south at the same time.

In the spring of 1922 Hendee did not observe any kittiwakes on their northward migration; the first specimen seen was taken on July 10. After that date a few birds were seen straggling north. This is one of the interesting problems of bird migration, for thousands move southward along the northwestern Arctic coast in early September.

Murdoch fails to include the species in his report of his two years' work at Barrow, so it is possible the birds noted at Wainwright in the fall of 1921 were wanderers from the south after the breeding season. This, however, does not seem to be the correct solution, for the great bands drifting southward had all the appearance of migrating. They were not loitering along the way and we had not observed straggling bands coming from the south. On October 17, when ice was forming on the sea, I took a young kittiwake from a flock of Ross Gulls.

At Wales the first was noted on May 17; and they were abundant at the Diomedes by June 3. A great migration occurred along the shore lead on June 16, and by June 25 the paired birds were occupying their nests along the precipitous walls of the Diomedes and Fairway Rock, although all the nests we examined were still empty. During June the kittiwakes did not seem to wander far from their nesting rocks, but late in July they were abundant along the mainland shore and even over the shallows of Lopp Lagoon.

RED-LEGGED KITTIWAKE. *Rissa brevirostris.*

But one bird of this species was observed closely enough for positive identification, that being on the 11th of July, at Whalen, eastern Siberia, where Hendee saw a finely plumaged specimen within a few feet of the ship.

GLAUCOUS GULL. *Larus hyperboreus.*

This large gull is a common bird of the Arctic. It was observed at practically all points visited, being seen frequently among the northern islands of Bering Sea and at Emma Harbor, Siberia, where nesting birds were noted along the cliffs of Providence Bay, and at Whalen near East Cape. To the eastward of Barrow a few were seen daily. Birds in worn, adult plumage worked the beaches near Wainwright the latter part of August. We found them exceedingly wild, doubtless because the Eskimos hunt them for food.

Between September 4 and 13 we saw may Glaucous Gulls near Icy Cape, and on September 16 the biggest migration we noticed passed Wainwright. The birds passed in bands for several hours in the morning, in flocks of a dozen at times, some in worn adult plumage, many without tails, some already taking on the winter adult plumage, and many of the large gray young of the year. They seemed to follow the high tundra banks and one could secure them easily by hiding behind some of the broken-down turf at the shoreline. This seemingly endless chain of gulls started about daybreak and continued until three in the afternoon, for the most part going straight on their southward journey, although occasionally a large flock would circle high in the air, like so many man-o'-war-birds, some flocks crossing below the village to the inlet and following upstream beyond sight. From that date to the 15th of October a few birds were noted daily and upon that date there was quite a flight down the coast in the morning, a few returning up the coast in the afternoon. A number were observed on October 19, after which time I have no record of their occurrence.

The following spring the first Glaucous Gulls were seen on April 12; and two others were observed a week later in a lead of open water. When the ice broke up on May 6 a few birds straggled along the coast, and from that time on they were the most common of the gulls. They nest sparingly along the tundra ponds, a nest with two eggs being found on June 30, and on August 20 a young bird unable to fly. Hendee states: "These birds were exceedingly numerous during the whaling season and flocked about whenever a whale was being 'cut in', to pick up the scraps of blubber left about. The native boys were greatly amused by the actions of these birds and were continually throwing pieces of meat into the air to attract them."

At Wales I saw the first of this species on April 20. It will be noted that Hendee recorded one specimen a week earlier than the above date although he was located 650

miles farther north. These birds undoubtedly work along the entire coast in small numbers, following the leads caused by the constant shifting of the ice-pack during the late winter days. I have no doubt that they occur around Wales during the latter part of March. By the first of May many wandered up the coast, and shortly after that date they were fairly common. They did not have a pronounced spring migration, however, like the fall movement southward which we observed at Wainwright on September 16. On the contrary, they seemed to move leisurely northward toward their breeding grounds. This species has a wide breeding range, at least from Bering

Fig. 32. NEST AND EGGS OF GLAUCOUS GULL, LOPP LAGOON, CAPE PRINCE OF WALES, ALASKA; JULY, 1922.

Strait Islands to far beyond Point Barrow. I found a few nests at Wales, situated usually upon little sand islands in Lopp Lagoon or in a tundra pond, where their nesting mounds were conspicuous for a long distance. The adults revealed their nest sites by fluttering overhead when one came near, voicing their protests in strident manner. Two or three eggs were usually found to a set. On one occasion I found a nest containing an egg of the Arctic Tern, one of the Old-squaw Duck, and one of the gull, upon all of which the bird was evidently brooding. What a surprised old bird she must have been when her strange assortment of chicks appeared!

I have listed all the Glaucous Gulls observed as *hyperboreus* although Dr. Oberholser holds that our North American species is *barrovianus*. The birds collected and observed in Siberia appeared larger to me in the field, but there is such a variation in size of individuals, according to sex, as well as in colors, that I have classed the two forms, if such there be, under *hyperboreus,* until the question is definitely settled by the A. O. U. Committee.

GLAUCOUS-WINGED GULL. *Larus glaucescens.*

I saw a few of these birds around the *Victoria* in Unimak Pass but did not observe the species northward until during the fall migration of 1921 when a few dark-winged

immatures were seen at Wainwright on September 16. A few young of the species were taken from among the great number of Glaucous Gulls which made their way southward, but it was impossible to identify them quickly enough to collect many as they passed overhead. Whether these young birds were reared to the eastward of Point Barrow, or whether they were stragglers from the south, is a question that will have to await further field work. The two specimens which we collected appear to be northern records for the species.

The following spring a few were seen at Cape Prince of Wales on May 18. At this date a "southwester" was blowing and a great many birds were drifting before the wind. During the latter part of August they were exceedingly abundant along the Alaskan peninsula, offshore from the Shumagin Islands, and at every fishing station and cannery along the coast.

SLATY-BACKED GULL. ***Larus schistisagus.***

One of these birds was observed at Nome, on July 28, where it was seen in company with a large band of kittiwakes alongside the *Bear* just as we were leaving for the Arctic. It was noticeably more shy than the other birds, staying aft usually, although it would join the flock when any offal was thrown overboard. Its "saddle" appeared especially conspicuous in flight, as it hovered low over the water. This was the only one seen during our entire stay in the north. It was feeding on refuse thrown overboard, and while the other gulls with which it fed would swim close to the ship, the Slaty-backed Gull swam far out to the rear, only joining the others when food was to be had.

HERRING GULL. ***Larus argentatus argentatus.***

We did not collect any Herring Gulls on our northward trip, nor during the fall of 1921 except on September 16 during the big southward flight of gulls at Wainwright. At this time the birds were working down the coast and for several hours there was a continuous flight. We collected several Herring Gulls, including adults already in their winter plumage, and also birds of the year. Migration and breeding notes of these gulls from northern Alaska are scarce and these specimens appear to be northern records for Alaska. It is quite probable that birds nesting to the eastward work over to the northwest coast and on down through Bering Strait to the Pacific.

VEGA GULL. ***Larus argentatus vegae.***

This bird was met on the Siberian side at Emma Harbor during our visit to the Siberian Coast early in July and a few specimens were taken. The following spring I saw a good many birds, with dark primaries, at Cape Prince of Wales; a specimen collected May 30 proved to be a high plumaged male of this species. They were not common. A few were seen about the Diomedes on June 3 and 25, and I have no doubt they were nesting.

THAYER GULL. ***Larus argentatus thayeri.***

Little is known about the migration of this species. We took one specimen from the large number of gulls passing at Icy Cape on September 16. It was taken by Upiksom, my native assistant, and the specimen was an immature male.

SHORT-BILLED GULL. ***Larus canus brachyrhynchus.***

This is apparently an abundant species in northern Alaska, yet with decided preferences as to feeding and breeding places, for it was observed abundantly in some places and lacking in others, though no great distance intervened. At St. Michael, for instance, they were plentiful, while not a bird was seen in the vicinity of Nome. A few were seen at Cape Blossom August 1, and one bird was taken at Wainwright September 2, a northern record, I believe. Hendee did not record the species at Wainwright in the spring. I saw but few at Wales, although they were fairly common on May 28 and 29 and a number were in migration at the Diomedes on June 3.

BONAPARTE GULL. *Larus philadelphia.*

I observed but one of this species, that being over the ice-pack at Wales on May 29.

ROSS GULL. *Rhodostethia rosea.*

A close watch was kept for this rare species, and our first flock of about thirty birds was seen October 12, flying down the coast and well offshore. The sky was lead color and the sea drab, closely matched in tone, which made the birds very hard to distinguish against the dull background, the black penciling of the primaries being the most conspicuous feature. I waved a handkerchief and the whole flock circled in, but as there was an offshore wind it was practically useless to shoot. I tried to collect a couple near the beach but they dropped well out, where I had to wade waist-deep to get them. I had left the dog behind as I thought the water too cold for him—slush ice then forming along the shore, and when salt water freezes, it is cold! But who wouldn't wade for his first Ross Gull?

After thawing for an hour, I went up the beach, this time taking Jerry with me, and was successful in getting three more birds from a flock of twelve. This flock consisted of scattered individuals that seemed to be feeding; but all the birds, as with the first band, were working south. Three flocks of about a dozen birds each were seen October 15 flying up the coast, but so far out I could not attract them. They were working along in straggling groups, a few alighting or separating from the main band as in a flock of terns, in flight reminding me of Bonaparte Gulls, all the birds dipping together with that same uniform, graceful, undulating swing so delightful to watch. On October 16, six flocks were seen near the mouth of Wainwright Inlet, averaging from a dozen to twenty birds each, but I could decoy only one flock in, from which, however, I secured a good series. These birds were working up the coast and the next day I saw a band of fifteen flying south, from which I secured my only adult Ross Gull, out of seventeen specimens. It was so cold that the salt spray froze to the dog, and one gull was carried out to sea, the dog not being willing to make more than two trips. While following the beach on our way to Barrow, October 24, I saw about fifteen birds working along the surf line where it welled under the ice. Four others were seen at Barrow October 27. Murdoch described the migration of this species at Barrow, but Mr. Brower, who has lived there many years, told me that some years they see very few or none at all. During the fall of 1921 there were a number about a whale carcass on October 13, and two specimens were taken for me. Mr. Brower has seen Ross Gulls in the spring and describes them as being then extremely beautiful and conspicuous, their rosy breasts forming a striking contrast to the monotonous white of the sea ice. Once he saw them very numerous in the spring, thirty miles offshore about a dead whale, where they fed upon the carcass. He also told me that he had seen them at Point Hope in the spring.

Hendee secured but one specimen of Ross Gull during the next season, an adult male on July 24. The natives from whom he secured the bird report it to have been one of five which were seen at the mouth of a small stream. None was seen about the lead in the spring, despite the close watch which was kept. Jim Allen informs me that this species was fairly common in August, soon after Hendee left Wainwright. I had expected to find it at Wales, but the natives did not know it from my description; so, unless the birds follow closely along the Siberian coast on a southward journey, I am satisfied that comparatively few go through the Strait, most of them keeping to the open leads of the Arctic. The natives are good observers and all at Wainwright knew the gulls from my description.

Murdoch found these birds numerous at Barrow in 1881-2, but the flocks always seemed to be flying in a northwesterly direction. He states, however, that "perhaps

the most plausible supposition is that soon after leaving Point Barrow, perhaps when they encounter the main ice pack, they turn and retrace their steps so far out at sea as to be unnoticed from land and pass the winter at the edge of the ice field, proceeding north to their breeding ground as the pack travels north in the spring." The specimens which we secured were feeding entirely upon a small "ice-shrimp" which abounds in the vicinity of large bergs. According to the notes on this species in Bent's "North American Gulls and Terns" their food seems to be wholly insectivorous when on their breeding grounds. From what the whalers told me, these birds doubtless are not different from other gulls, however, in that they will greedily take any offal lying about.

SABINE GULL. *Xema sabini.*

This gull was met with generally along the coast, but in the greatest numbers at St. Michael July 18 to 23. There we secured a good series of adults about the wharves. A few examples were noted at Wainwright August 5, at Point Barrow the 6th, and at Cape Halkett the 10th. The first young was observed at Wainwright by Hendee on August 6, in company with an adult. A few scattering birds were seen during the fall months at Wainwright; two on August 21, one on August 31, four September 1, and two September 4. Wainwright is situated in a bight, so that birds in direct migration would pass well offshore where they would not be observed. Several large flocks passed Icy Cape, going south, September 7, and our last observation was made September 16, when we collected a young bird at Wainwright.

In the spring, Hendee saw the first Sabine Gull on May 28 in company with Glaucous Gulls and Pomarine Jaegers over an open lead, and several others were seen the next day. They were not abundant during the summer but were observed practically every day. These little gulls breed sparingly about Wainwright, choosing the small islets and hummocks of the tundra lagoons as their nesting sites. On several occasions, broken eggs of this species were found. One set of three eggs was secured on the tundra some miles north of Wainwright on the bank of a lagoon.

At Cape Prince of Wales a few birds were observed on June 3 and others on June 16. On Lopp Lagoon, about twenty miles from Wales, they were fairly abundant, and I found several nests in construction the first week of July. The nests were of grass, upon a muddy peninsula of a tundra lagoon. These birds were a month later in nesting than Nelson records them at St. Michael, which seems to be the average for the other species as well, a fact which speaks ill for the climate in the vicinity of the cape.

*Denver, Colorado, January 12, 1925.*

## ADDITIONAL INFORMATION CONCERNING THE BIRDS OF YOSEMITE VALLEY

By CHARLES W. MICHAEL

THE AUTHOR of this article has been a resident of Yosemite Valley since May 1, 1920. The information contained in the following report was gleaned from daily records kept during all these years; and a complete copy of these detailed records has been filed for permanent keeping and reference in the Museum of Vertebrate Zoology at Berkeley. All the birds mentioned in the following report were seen on, or from, the floor of the Valley, and within four miles of Yosemite village. No specimens were taken to back up these records, but the observer was cautious and it

is believed that the records are substantially correct. As a rule, all of the facts here presented are supplementary or additional to those given in Grinnell and Storer's "Animal Life in the Yosemite" (University of California Press, 1924) which summarized our knowledge of Yosemite ornithology up to the end of 1920.

**Colymbus nigricollis californicus.** American Eared Grebe. A single bird was noted on the Merced River March 17, 1923.

**Larus californicus.** California Gull. A single bird noted May 28 and August 1, 1923.

**Anas platyrhynchos.** Mallard. Has been known to nest here two different years. A female noted on Mirror Lake July 15, 1920, with three half-grown young. Two female birds, each with downy young, were noted June 27, 1922, in the swamp at Leydig Meadow. July 30, 1922, a female with three young not much past the downy stage was seen in the same swamp. Taking all the years of observation into consideration it is found that Mallards have been seen every month of the year.

**Marila collaris.** Ring-necked Duck. A small flock of from four to ten birds is usually seen some time during December. The earliest date is December 6, 1920. In January, 1923, a flock was present the entire month. In February, 1922, six female and four male birds were present daily. Latest date noted was March 23, 1922.

**Charitonetta albeola.** Buffle-head. A single male bird was noted on the river near Sentinel Bridge April 3, 1923.

**Histrionicus histrionicus.** Harlequin Duck. Harlequin Ducks were first noted by us May 11, 1920, when a pair appeared on the Merced River in front of camp. A pair (no doubt the same) was noted May 26 and June 4, and on July 28 a lone female was seen. The following year, March 30, 1921, the male appeared on the river in front of camp and on April 6 this bird was joined by his mate. This pair was coaxed to eat from a floating lunch counter and they stayed with us until May 10, when both birds suddenly left. March 30, 1922, the male again appeared and came at once to our lunch counter. The female, however, failed to keep her tryst and on May 2 the male died. The mounted specimen is now on display at the Yosemite Museum. No Harlequins have since been noted in the Valley. (For further information regarding this pair of Harlequins, see Auk, XXXIX, January, 1922, pp. 14-23, pls. II-III.)

**Ardea herodias.** Great Blue Heron. Never numerous. Single individuals noted every month in the year, except May and June. Strange that they should be seen flapping off across the snow fields in the middle of winter!

**Porzana carolina.** Sora Rail. A single male bird in full plumage noted April 27, 1923.

**Fulica americana.** Mud-hen. A lone individual was noted April 6, 1922. Again, in 1924, a single bird was present on a bit of back-water of the Merced from April 4 to 9 inclusive.

**Oxyechus vociferus.** Killdeer. Rare. The only records are of lone birds noted on the following dates: November 11, 1921, November 29, 1922, and March 17, 1924.

**Dendragapus obscurus sierrae.** Sierra Grouse. Rarely noted below the rim of the valley, except during April when their drumming notes are likely to be heard daily coming from the south wall. Records in other months are: June 27, 1924, an old bird with three young appeared in camp. A week later one young bird was noted. August 6, 1921, an old bird with two half-grown young.

**Cathartes aura septentrionalis.** Turkey Vulture. On the morning of November 10, 1922, during a heavy snow storm, one of these birds was picked up exhausted. After being fed and cared for he gained strength and after a few days he took wing and was seen no more.

**Aquila chrysaetos.** Golden Eagle. Has been noted every month in the year. Usually two birds are seen sailing together. In summer they are likely to be seen sailing over the Illilouette Canyon; in winter they sail along the north wall of the valley. During the winter of 1921-22 two young birds accompanied the parents, and the young were forever yelping for attention.

**Falco sparverius.** American Sparrow Hawk. These birds have been noted every month in the year, except March. During the winter months single individuals are noted. Pairs are noted from April 10 on. Several pairs nest here, and for a nesting site they choose an abandoned flicker hole in some dead cottonwood.

**Glaucidium gnoma californicum.** California Pigmy Owl. With the exception of July the Pigmy Owl has been noted every month in the year. It appears from the

records, however, that a gap occurs between late June and the latter part of August. It is likely that they wander away after the nesting season, as fledgling young have been noted in June.

**Geococcyx californianus.** Road-runner. A single individual was noted November 13, 1924, at the edge of the Kenneyville field.

**Ceryle alcyon caurina.** Western Belted Kingfisher. Kingfishers have never been missing from the valley in all the last four years. During 1924 three pairs nested here. The nests were in the sandy river-bank about two miles apart.

**Sphyrapicus varius daggetti.** Sierra Red-breasted Sapsucker. This bird has not been noted on the floor of the valley until early fall; the first date in our record is August 8, 1924. During September, October, November and December single birds are likely to be found in any of the three apple orchards. During 1921-22 a lone bird was present in the Sovulewski orchard all through January and up until February 24. The only time a sapsucker was noted between February and August was April 18, 1922.

**Asyndesmus lewisi.** Lewis Woodpecker. October 8, 1921, a flock of Lewis Woodpeckers appeared in the valley; from this date on, three of these birds were present until May 8, 1922. We have no records for June or July, August 11, 1924, being the earliest date. August 29, 1924, Lewis Woodpeckers arrived in numbers, and eight of these birds were still present January 20, 1925.

**Cypseloides niger borealis.** Northern Black Swift. Our only records for these birds are: May 21 and 25, 1924, a flock of twelve noted; June 5, 1924, a flock of twenty-five seen sailing low over the Stoneman Meadow.

**Calypte anna.** Anna Hummingbird. Anna hummers have been noted frequently during June, July and August. Earliest date, June 11, 1923. Latest date, September 8, 1924.

**Stellula calliope.** Calliope Hummingbird. The arrival of the Calliope hummer corresponds with the blooming of the manzanitas, and this blooming varies with the seasons. Arrivals during the past four seasons were: April 6, 1921, May 9, 1922, April 27, 1923, and March 2, 1924. During the season of 1922 the manzanitas failed to bloom, and this we believe accounts for the late arrival of the Calliopes. Latest date on our records is September 10, 1924.

**Tyrannus verticalis.** Western Kingbird. Stragglers wander into the Valley before and after the nesting season. Frequently noted during May and August. The only time noted other than the above months was September 27, 1923.

**Myiarchus cinerascens.** Ash-throated Flycatcher. The only records we have for the Valley are August 1, 7, and 19, 1924, when a lone bird was noted (no doubt the same individual).

**Sayornis sayus.** Say Phoebe. A single bird was noted on the following dates: March 24, 1922, March 24, 1924, and September 11, 1924.

**Sayornis nigricans.** Black Phoebe. These birds do not nest here, but unattached stragglers have been noted off and on from April until September. Earliest date, March 27, 1921. Latest record, November 17, 1924. A single individual was present daily from July 9 to November 17, 1924.

**Otocoris alpestris.** Horned Lark. The only records we have are the two following. A dead specimen found March 1, 1922, and a single bird noted November 9, 10, and 11, 1924. This last bird was grayish and had none of the reddish cast of color of *actia*, wherefore we took it to be *merrilli*, from the Mono Lake region.

**Aphelocoma californica immanis.** Interior California Jay. A rare straggler in the Valley. Noted August 30, 1921, November 12, 19, and 26, 1922, and September 22, 1924.

**Corvus brachyrhynchos hesperis.** Western Crow. A few crows pass through the Valley each year. In spring we may see six or eight. In fall we have never seen more than three. In fall they stay but a few days, while in spring they may remain about the Valley for two weeks. Following is the record of arrivals: March 28, 1922, April 13, 1923, April 2, 1924, and March 30, 1921. Fall arrivals: November 3, 1921, October 22, 1922, October 22, 1923, and November 17, 1924.

**Nucifraga columbiana.** Clark Nutcracker. These birds appeared in numbers on the floor of the Valley late in September, 1922. They were present daily until the end of January of the following year. Small groups were noted frequently through February, March and April. The only record after April 26 was on June 25, 1923, when a single bird was noted.

**Sturnella neglecta.** Western Meadowlark. Meadowlarks are not common in the Valley, but stray birds are likely to be noted any time from early April until the end

of September. Early dates are: April 1, 1922, May 4, 1923, and April 10, 1924. Late dates are: November 13, 1921, October 27, 1923, and October 4, 1924. During 1923 three of these birds were present daily in the Stoneman Meadow from May 4 until July 1. During 1924 a flock was present in the Kennyville Meadow from July 23 until September 29. On several occasions during this period fifteen birds were counted.

**Icterus bullocki.** Bullock Oriole. Wandering groups of two or four birds occasionally appear in the Valley during May and June, and during 1924 they again appeared after the nesting period. Complete data are as follows: May 27 and June 8, 1922; May 14 to 25, 1923; April 30, May 7 and 9, 1924; August 1, 11, 14, 19, and 29, 1924. A lone bird noted September 8, 1924.

**Hesperiphona vespertina californica.** California Evening Grosbeak. Evening grosbeaks are commonly present in flocks from early spring until the end of September. During the month of May there are usually four or five flocks of from ten to thirty birds. From the middle of June until the middle of July they are not so common and only scattered individuals are noted. From the middle of July until the end of August they are likely to be more numerous. There is no evidence to indicate that evening grosbeaks nest in the Valley. Early records are: April 12, 1921, March 2, 1923, and May 10, 1924. Late records are: October 21, 1922, October 11, 1923, and October 2, 1924.

**Loxia curvirostra bendirei.** Sierra Crossbill. The only records for crossbills are of a flock of thirty birds March 1 and 12, 1923.

**Astragalinus psaltria hesperophilus.** Green-backed Goldfinch. A few of these birds nest here every season. They are irregular in time of arrival. Stray birds have been noted on the following dates: February 13, 1921; June 4, 1922; March 24, 1923; May 22, 1924. They are most abundant during June, July and August. Last noted, September 3, 1921; September 3, 1922; October 6, 1924.

**Spinus pinus.** Pine Siskin. Taking the last four years into consideration, siskins have been noted in the Valley every month in the year, except August and September. They always appear in flocks. The fall records are: September 3, 1921; October 12 to 20, 1922; November 6 and 26, 1922; December 1 to 20, 1922; not present in the fall of 1923; December 11, 1924, a flock of 100. Further dates: A flock of 20 noted January 23 and 24, 1921; a flock of 20 twice noted in January, 1922. Present the entire month of February, 1921. Common birds in March, April and May. During 1922 a flock was present in the Valley until June 16. This last record is the only one we have for June.

**Passer domesticus.** English Sparrow. Two of these birds appeared in the village street April 27, 1924. They were noted the two following days, but we failed to locate them on the last day of the month. A pair at Kennyville stables May 10 and 16. Again we saw the pair at Kennyville June 2, 1924; and this was the last seen of English Sparrows in the Valley.

**Pooecetes gramineus.** Vesper Sparrow. A single bird was noted in Leydig Meadow, April 26, 1924.

**Chondestes grammacus strigatus.** Western Lark Sparrow. A single bird noted April 12, 1922. August 16, 1924, eleven birds were seen in the Kennyville field, and on August 16, 20 and 30, lone individuals were noted in the same locality. Last noted September 11, 1924, when a single bird was seen.

**Zonotrichia leucophrys.** White-crowned Sparrow. These sparrows are never numerous in Yosemite Valley, but each spring we find a certain number. The dates of arrival are as follows: Three birds April 23, 1922. Two birds April 17, 1923. Three birds April 19, 1924. Scattering individuals are occasionally seen during May and June, but usually after the first week in June they are not again noted until fall. An exceptional record is this: Young being fed by parent birds were noted June 28 and July 2 and 6, 1922. First noted in fall: September 3, 1922, October 28, 1923, and September 11, 1924. Last noted November 9, 1922, December 24, 1923, and November 10, 1924. The spring White-crowns and the nesting pair were believed to be *Z. leucophrys leucophrys.* The fall birds may have been *Z. l. gambeli.*

**Zonotrichia coronata.** Golden-crowned Sparrow. The only records we have for these sparrows are: October 21, 1921, five birds; October 22 and 30, 1922; October 17, and October 26 to November 2, 1923; September 16, 1924, a young bird noted at the feeding table. The following day this latter bird was joined by a male in full plumage. Both birds remained about camp until October 8. A single bird was noted November 1, 1924.

**Stelgidopteryx serripennis.** Rough-winged Swallow. On June 11, 1924, a pair of Rough-winged Swallows was discovered working on a nest in the gravel bank below Stoneman Bridge. The nest-hole was located ten feet away from a kingfisher's nest and not fifty feet from campers on the bank above. It is believed that a family was successfully reared. They were last seen July 26, 1924. The above is our only record for these swallows in the Valley.

**Dendroica auduboni.** Audubon Warbler. Audubon Warblers have been noted in the Valley every month in the year. The migratory wave strikes the Valley about the last of April. Hundreds are usually here during May, but only a few remain to nest. During October there comes another wave, and a few stragglers remain through the winter.

**Mimus polyglottos leucopterus.** Western Mockingbird. A single bird was noted September 21, 1924.

**Troglodytes aedon parkmani.** Western House Wren. A single pair of birds has nested in the eaves of a certain old building in the village for the last three years. This pair arrived May 12, 1922, and was present until July 1. After this date a single bird was noted July 26, August 20 and 24, 1922. Arrived April 26, 1923. Present until June 24, 1923. Arrived April 24, 1924. Present daily until September 14. Latest record, October 8, 1924.

**Sitta carolinensis aculeata.** Slender-billed Nuthatch. Our first record of these birds in the Valley is November 5, 1923. During 1924 a bird was noted June 28 and July 19. Again seen August 10. From this date on they became common and by September 1 there were at least ten birds in the Valley. Thereafter they were present daily until the present writing (January 26, 1925).

**Sitta pygmaea.** Pigmy Nuthatch. Not noted during 1921, 1922 or 1923, but during 1924 small flocks of from eight to ten birds were noted on the following dates: February 5, November 2, 11, 15, 18 and 28, and again December 25.

**Baeolophus inornatus.** Plain Titmouse. Two birds noted frequently during January and February, 1921. One bird noted occasionally during February and March, 1922. Next noted November 26, 1924. Probably three birds, not more, were present daily through December and up to the present writing (January 26).

**Psaltriparus minimus californicus.** California Bush-tit. It would appear that bush-tits are resident birds, for they nest here and may be found every month in the year. During the winter months three flocks of from fifteen to forty birds are usually present.

**Regulus calendula cineraceus.** Western Ruby-crowned Kinglet. For the last four years ruby-crowns have not been present during the summer months. They appear in the Valley during September and remain until the following May, as indicated by the following records: September 3, 1921; September 3, 1922; September 23, 1923; and September 4, 1924. Last noted, May 10, 1921, May 15, 1922, May 6, 1923, and May 4, 1924.

**Polioptila caerulea obscura.** Western Gnatcatcher. Rare birds on the floor of the Valley. A single bird noted September 1, 1921. They were not again noted until June 9, 1924, but after this date they were noted frequently until the end of August; possibly a dozen birds in the Valley. Last noted September 20, 1924. July 20, 1924, a parent gnatcatcher was seen feeding young in the oaks back of Camp Curry.

**Sialia currucoides.** Mountain Bluebird. These birds are erratic in their visits to the Valley. Flocks of from three to ten birds are usually noted in late fall and again in early spring. Fall dates when they appeared are: December 3, 1921; December 1 and 4, 1922; October 11, 23, November 1 and 2, 1923. Spring dates: May 7, 1921; March 14 and 25, 1922; April 2, 3, 8, 12, 18 to 30, 1922; May 4, 5 and 12, 1922; March 1 and 28, April 1, 15 and 27, 1923; February 14, March 16, April 4 to 10, 1924. A flock of twelve birds was present during the latter period. A surprising record was that of June 30, 1921, when a flock of thirteen birds was noted in the meadow below the village.

*Yosemite, California, January 26, 1925.*

# FROM FIELD AND STUDY

**Early Technique in the Making of Bird-skins.**—Charles Waterton, a naturalist of Yorkshire, England, made five voyages to Guiana in the period between the autumn of 1804 and the close of 1824. In 1825 he published an account of all his voyages save the first one, in a book entitled "Wanderings in South America, the North-West of the United States, and the Antilles, in the Years 1812, 1816, 1820, and 1824; with original instructions for the perfect preservation of birds &c., for cabinets of natural history."

Although written in the formal style of that period, the book is truly interesting. During the 1812 journey, Waterton sought for and obtained a small amount of the arrow poison used by the natives of Guiana, which he took to England for experimental purposes. Subsequently he collected birds, mammals, and reptiles, and had numerous adventures exhilarating to a naturalist, one of which was the capture of a ten-foot alligator by the native Indian method.

Waterton's directions for the preparation of birds is of considerable historical interest, I believe, but as they are too long to quote in full, the chief steps are given in the following summary:

> Fill the mouth and nostrils with cotton. Lay the bird on its back on your right knee with the bill toward the left shoulder. Part the feathers in the mid-line and make an incision through the skin from the breast to the vent. Separate the skin as far as the middle joint of the thigh and cut this through. Place cotton between the skin and the body. Do the same on the other side.
>
> Place the bird perpendicularly with breast on knee, back toward you, and separate the skin on each side of the vent. Cut across this to the backbone near the root of the tail. Sever the backbone. "Apply plenty of cotton." Push the skin back until you come to the wings and cut these through close to the body. Push the skin gently back over the neck and head, cut out the roots of the ears, and continue until the eyes are reached. Cut quite through the nictitating membrane and arrive at the root of the bill. Remove the body and most of the skull. Return the head through the inverted skin.
>
> Now proceed to the wings. With thumbnail and forefinger push the skin off the middle joint of the wing and remove all the flesh. "Tie a thread about four inches long to the end of the bone," and put the bone back in place. Next, skin the thigh quite to the knee, cut away all the flesh and tendons, and leave the bone; form an artificial thigh around it with cotton, and draw back the skin. "Tie together the two threads which you had fastened to the ends of the wing joints, leaving exactly the same space betwixt them as your knowledge of anatomy informs you existed there when the bird was entire."
>
> Introduce cotton for an artificial body by means of a little stick like a knitting needle, "and without any other aid or substance than that of this little stick and cotton, your own genius must produce those swellings and cavities, that just proportion, that elegance and harmony of the whole, so much admired in animated nature and so little attended to in preserved specimens." Sew up the orifice in the belly, beginning at the vent.

It is probable that in Waterton's time all specimens were mounted. He gives in his description some further directions for treatment to that end, such as the insertion of glass eyes, tacking the thighs to the body, etc. For a preservative he used a solution of mercuric chlorid in alcohol, by means of a swab. Regarding its efficiency he says: "Perhaps it may be satisfactory to add here, that some years ago I did a bird upon this plan in Demerara. It remained there two years. It was then conveyed to England, where it stayed five months, and returned to Demerara. After being four years more there, it was conveyed back again through the West Indies to England, where it has now been near five years, unfaded and unchanged."

Comparing the directions given by this early traveler with a description of our present technique, such, for example, as given by Chapin in the American Museum leaflet, it is interesting to note that there are only minor differences between them—a few refinements only. Coues does not mention the device of tying the wing bones together. I believe we may say that Charles Waterton was the originator, over a hundred years ago, of the modern method of making a bird-skin.—C. H. Wood, *Glendora, California, February 18, 1925.*

**Casualties among Birds.**—During the nesting season of 1924 the writer kept, wherever possible, complete data on all nests visited. This was for the purpose of getting some idea as to the casualties in the nest, due to natural causes. In order to do this the following items were noted:

1. The actual number of eggs laid.
2. The number of eggs hatched.
3. The number of young birds that lived long enough to fly from the nest.

The following table is compiled from the data obtained.

| Name | Nest no. | Eggs laid | Eggs hatched | Young which left nest | Per cent eggs hatched | Per cent young that left nest | Pct. eggs which produced adults | Per cent casualties |
|---|---|---|---|---|---|---|---|---|
| California Quail | 1 | 8 | destroyed | 0 | 0 | 0 | 0 | 100 |
| | 2 | 6 | destroyed | 0 | 0 | 0 | 0 | 100 |
| | 3 | 12 | destroyed | 0 | 0 | 0 | 0 | 100 |
| | | 26 | all destroyed | 0 | 0 | 0 | 0 | 100 |
| Barn Owl | 1 | 4 | 3 | 1 | 75 | 33 | 25 | 75 |
| California Screech Owl | 1 | 2 | abandoned | 0 | 0 | 0 | 0 | 100 |
| | 2 | 3 | 3 | 2 | 100 | 67 | 67 | 33 |
| | 3 | 4 | 4 | 3 | 100 | 75 | 75 | 25 |
| | 4 | 3 | destroyed | 0 | 100 | 0 | 0 | 100 |
| | | 12 | 7 | 5 | 58 | 71 | 42 | 58 |
| Black Phoebe | 1 | 4 | 4 | 4 | 100 | 100 | 100 | 0 |
| | 2 | 4 | destroyed | 0 | 0 | 0 | 0 | 100 |
| | | 8 | 4 | 4 | 50 | 50 | 50 | 50 |
| Western Flycatcher | 1 | 3 | 3 | 3 | 100 | 100 | 100 | 0 |
| Coast Jay | 1 | 4 | 4 | 2 | 100 | 50 | 50 | 50 |
| California Jay | 1 | 4 | abandoned | 0 | 0 | 0 | 0 | 100 |
| | 2 | 4 | 3 | 3 | 75 | 100 | 75 | 25 |
| | 3 | 3 | 3 | 3 | 100 | 100 | 100 | 0 |
| | 4 | 4 | 4 | 4 | 100 | 100 | 100 | 0 |
| | | 15 | 10 | 10 | 67 | 100 | 67 | 33 |
| California Towhee | 1 | 3 | 2 | 2 | 67 | 100 | 67 | 33 |
| San Francisco Towhee | 1 | 4 | deserted | 0 | 0 | 0 | 0 | 100 |
| | 2 | 4 | 4 | 2 | 100 | 50 | 50 | 50 |
| | | 8 | 4 | 2 | 50 | 50 | 25 | 75 |
| Black-headed Grosbeak | 1 | 4 | 4 | 3 | 100 | 75 | 75 | 25 |
| | 2 | 4 | destroyed | 0 | 0 | 0 | 0 | 100 |
| | 3 | 4 | 4 | 2 | 100 | 50 | 50 | 50 |
| | 4 | 4 | 4 | 2 | 100 | 50 | 50 | 50 |
| | | 16 | 12 | 7 | 75 | 58 | 44 | 56 |
| House Finch | 1 | 5 | deserted | 0 | 0 | 0 | 0 | 100 |
| Golden Pileolated Warbler | 1 | 5 | 5 | 5 | 100 | 100 | 100 | 0 |
| | 2 | 4 | 3 | 3 | 75 | 100 | 75 | 25 |
| | | 9 | 8 | 8 | 90 | 100 | 90 | 10 |
| Coast Bush-tit | 1 | 6 | destroyed | 0 | 0 | 0 | 0 | 100 |
| | 2 | 6 | 6 | 0 | 100 | 0 | 0 | 100 |
| | 3 | 7 | 6 | 0 | 86 | 0 | 0 | 100 |
| | 4 | 5 | 5 | 5 | 100 | 100 | 100 | 0 |
| | 5 | 6 | 3 | 3 | 50 | 100 | 50 | 50 |
| | 6 | 6 | destroyed | 0 | 0 | 0 | 0 | 100 |
| | 7 | 10 | 10 | 10 | 100 | 100 | 100 | 0 |
| | 8 | 5 | 3 | 3 | 60 | 100 | 100 | 40 |
| | 9 | 6 | 3 | 3 | 50 | 100 | 50 | 50 |
| | 10 | 6 | destroyed | 0 | 0 | 0 | 0 | 100 |
| | 11 | 5 | 5 | 5 | 100 | 100 | 100 | 0 |
| | 12 | 6 | 5 | 3 | 83 | 67 | 50 | 50 |
| | | 74 | 46 | 32 | 62% | 70% | 43% | 57% |
| GRAND TOTAL | 38 | 187 | 103 | 76 | 55% | 74% | 41% | 59% |

The above table shows data on 38 nests examined, and of this number, 13 or 34% were either abandoned or destroyed. The total number of eggs found in these nests was 187, and of this number only 103 or 55% hatched, and only 76 or 74% of the young that hatched, ever lived to be old enough to leave the nest. Of the total number of 187 eggs laid, only 76 or 41% ever developed into birds old enough to leave the nest. This makes a total casualty record of 59%.

The California Quail shows a casualty of 100% on the three nests found; and when a weighted average is taken the Bush-tit would come next, with a casualty of 57% in the 12 nests examined. Of the quails' nests, one was destroyed by a gopher snake, and the others were destroyed by unknown agents. The Screech Owl nests nos. 1 and 4 belonged to the same female, as I had banded her in the first nest. The Black Phoebe nest was knocked from the beam that it was built upon, probably by small boys, a very natural enemy of the bird. The Bush-tit nests that were destroyed all had holes in the side, as though some jay or predatory animal had destroyed them for the eggs. The House Finch's nest was built where several hundred people passed within ten feet of it, each day, and this circumstance may have been the cause for its desertion.—ERNEST D. CLABAUGH, *Berkeley, California, February 28, 1925.*

**Nesting of the Sage-hen in Siskiyou County, California.**—In the vicinity of the Charles Laird ranch on the west shore of Lower Klamath Lake, the Sage-hen (*Centrocercus urophasianus*) has long been known to be a common bird. About a mile south

of the ranch-house is an area of about an acre in extent where the ground is almost devoid of vegetation. Sage-hens have used this area as a strutting-ground in the spring for many generations. The entire country round about is well covered with sagebrush, with here and there a lone juniper tree.

On May 11, 1917, I found a nest of this species not over half a mile from the strutting-ground on a gentle, sagebrush slope. Scattered about the nest were the broken fragments of several eggs, while only one perfect egg remained in the nest. The tell-tale tracks of a coyote leading to and from the nest told the oft-repeated story of the hunger of these animals for young birds and eggs.—STANLEY G. JEWETT, *Portland, Oregon, January 30, 1925.*

**Polygamy Practiced by the House Finch.**—The article "Communism in the California Woodpecker" by Frank A. Leach in the January, 1925, CONDOR, recalled to me a polygamous family of House Finches (*Carpodacus mexicanus frontalis*) which made its home with us in the hills near Eagle Rock, California. On April 22, 1912, one male and two females began building a nest on top of one of the beams supporting the roof of the front porch. This position was sheltered by a wisteria vine. All three birds worked together in building the nest. Two eggs were in the nest on April 28. Ten eggs were laid, one being crowded out of the nest. After the first part of the incubation period, during which there were frequent contests between the females for the privilege of sitting on the eggs, one of the females apparently disappeared and was seen no more. The eggs had begun to hatch on May 12, but only six of them hatched. My notes do not so state, but it is my recollection that all the young prospered to the time of flying from the nest, after which I could not identify them.—HAROLD MICHENER, *Pasadena, California, March 16, 1925.*

**Two Ducks of the High Sierras.**—While on a camping trip in the Sierras during the late summer of 1918, I had the good fortune to meet with a family of Harlequin Ducks (*Histrionicus histrionicus*). On August 10, I was camped on the upper reaches of the Cherry River, at Lord's Meadows. These Meadows are at about 7500 feet altitude and are located at the junction of Cherry River and Huckleberry Fork. Cherry River and its tributaries drain the northern section of the Tuolumne basin, just outside the Yosemite National Park.

While fishing along a stretch of quiet water below the meadows, I noticed eight ducks sunning themselves on a large, smooth boulder that sloped gradually down to the water's edge. I crept up behind another boulder about thirty feet distant and watched them for some time. Finally they slipped into the water, one after another, and worked up-stream into some rapids near the junction of the two streams. The young led the way while the female followed along behind. The young were adept in swimming, and were able to climb up through the water that rushed and boiled down over the boulders. They soon started feeding and would plunge down into the swirls time and again. The food taken, as evidenced by the stomachs of the two young collected, seemed to consist of dragon-fly larvae.

After they finished feeding, they started down-stream in a scattered group. I shot two of the young to determine their species for certainty. They are both in the Museum of Vertebrate Zoology, one as no. 29549 in the museum collection, the other as no. 5 in my own collection.

The male was not in evidence at any time, probably having departed earlier in the season. The young were nearly full-grown but yet unable to fly. They would dive at the report of the gun, disappearing as easily and rapidly as grebes. The female took wing and dashed rapidly up and down the river uttering a series of gabbling notes. She gave another call that sounded something like a female Golden-eye's call.

I caught one of the youngsters in the water, whereupon it feigned death. However, when I laid it upon the ground on its back, it suddenly "came to life" and struck out for the water, using wings, bill and feet with apparently equal facility. I disturbed them no further.

At a small lake, high on the top of Kibbie Ridge and only five miles by trail (2½ miles air line) from the home of the Harlequin Ducks, I collected on June 30, 1922, a female Barrow Golden-eye (*Clangula islandica*), now no. 43997 in the Museum of Vertebrate Zoology. The whole situation, and the condition of the female duck, gave promise of a nest in the near vicinity. The lake, however, was cut up along one side

with numerous promontories and little bays. The promontories were well covered with lodge-pole pines and alpine hemlocks. The shore-line was densely covered with chinquapin and dwarfed manzanita. We spent most of the day investigating every possible and likely-looking nesting site, but to no avail. The nest, which I feel certain was located nearby, must have been well hidden and may have been on one of the three small islets at the west end of the lake, near where the female was taken.

The bird uttered a peculiar and complaining sort of two-syllabled *quer-ew*, sounding somewhat like the call of an American Golden-eye, but much higher and more complaining in tone. No male bird was in evidence at any time, either on this lake on on Spotted Fawn Lake, a short way over the hill.

There are great possibilities in store for future field work in this section, which should lead to the discovery of the nest of both the Harlequin and Barrow Golden-eye ducks.—DONALD D. MCLEAN, *Coulterville, California, October 8, 1924.*

**A Correction Concerning the Starling.**—In a paper entitled "The Starling Family at Home and Abroad", by Casey A. Wood, which was published in THE CONDOR, XXVI, July, 1924, the following concerning the European Starling (*Sturnus vulgaris*) appeared on page 125:

"Harrison F. Lewis (Auk, vol. 39, 1922, p. 513) reports that a pair of these winter-defying birds was found in Labrador in 1917, where they not only raised a summer brood, but flourished in temperatures many degrees below zero. This is probably the earliest Canadian record."

This is not correct. My record at the place cited is simply as follows:

"*Sturnus vulgaris.* Starling. A skin of this species was shown to me at the home of Mr. F. W. Salzman, at Betchewun, where it was taken. Under date of August 31, 1921, Mr. Salzman has written to me that this bird was killed 'four years ago in April.' This is the first Labrador record of the Starling."—HARRISON F. LEWIS, *Ottawa, Canada, February 4, 1925.*

**Some Birds New to the Cape San Lucas Region.**—During the period between February 3, 1923, and November 2, 1924, the writer was engaged continuously in field work in the Cape Region of Lower California, Mexico. In this time two hundred and forty species of birds were observed and of this number, as far as I can find any record, the following appear not to have been recorded.

*Larus argentatus.* Herring Gull. It is hard to say much as to the abundance of this gull. It was seen only at San Jose del Cabo, a female immature being taken there April 20, 1923. In the winter months large numbers of various young gulls frequented the mouth of the tide lagoon at San Jose del Cabo, but at that place no adult gulls of any species were seen, with the exception of *Larus californicus.*

*Florida caerulea.* Little Blue Heron. Three white immature birds were taken, one at La Paz February 28, 1924, and two at Todos Santos—one October 28, 1923, and the other September 15, 1924. I saw no adults, and possibly more immatures were among the Snowy Egrets also seen there.

*Calidris canutus.* Knot. This, as usual on the Pacific Coast, was a rare bird. Two were seen and secured on the mud flats near La Paz September 19 and 24, 1923.

*Limosa fedoa.* Marbled Godwit. Quite a common winter visitant to the vicinity of San Jose del Cabo and La Paz. A pair was taken at the latter place September 12, 1923.

*Arenaria melanocephala.* Black Turnstone. A few were seen at La Paz in September and one was secured near Loreto April 15, 1924.

*Tyrannus tyrannus.* Eastern Kingbird. One seen at Todos Santos sitting on a wire fence in company with a Cassin Kingbird, August 3, 1924. I wounded the Eastern Kingbird but before it could be picked up it escaped into the bushes.

*Myiarchus magister magister.* Arizona Crested Flycatcher. Of the large series of *Myiarchus* taken in the Cape Region one proved to be of this species; it was an adult male taken at San Jose del Cabo April 30, 1923.

*Empidonax wrighti.* Wright Flycatcher. Of the large numbers of small flycatchers, including *E. griseus, E. d. cineritius* and *E. d. difficilis* taken, one proved to be of this species; it was an adult male taken at San Jose del Cabo April 17, 1923.

*Pooecetes gramineus confinis.* Western Vesper Sparrow. The only place I saw vesper sparrows was at El Oro. A very few were seen there, the first week of February, 1924, when three were secured, one on the 2nd and two on the 4th. These proved to be *P. g. confinis* rather than *P. g. affinis*, which latter was recorded by Brewster.

*Piranga rubra cooperi.* Cooper Tanager. A single immature male was seen and taken at San Jose del Cabo February 23, 1923.

*Hylocichla ustulata swainsoni.* Olive-backed Thrush. Thrushes were fairly common in the fall at Todos Santos, but at La Paz none was seen with the exception of one of this species taken on October 11, 1924.

*Hylocichla guttata slevini.* Monterey Hermit Thrush. Quite common in the fall and spring in various parts. Several taken.—CHESTER C. LAMB, *Los Angeles, California, March 7, 1925.*

# WITH THE BIRD BANDERS

Under the Direction of J. Eugene Law, Altadena, California

**A Banding Outfit and Some Traps.**—As well as the banding outfit, two traps are given here which bird banders may find worth experimenting with. I say experimenting with, because, however well a trap may suit the person who made it, or the species of bird for which it was intended, it may still prove worthless to some other bander using it under different conditions.

It is my belief that position of the trap plus camouflage and the habits of the birds

Fig. 33. BANDING OUTFIT. A NOTE BOOK SHOULD BE ADDED.

it is desired to catch, are really the first points to be considered, after which the most suitable trap for the purpose might be selected from the many types described from time to time in the various banding papers. I live in the woods, and although my land runs down to the sea, birds are not overly plentiful; and they are extremely shy, so that when I tried cage traps and some others that might be called city traps, they failed me with most species.

After experimenting with a good many, I found them, as traps, for the most part, ideal, but few suited the conditions prevailing here. I then started to alter them or discard them entirely, and after watching the birds as they approached them, and when in them, I was finally able to get what appeared to suit the birds best, or frightened them least.

Those given here have been well tried. A third, a funnel trap, has already been referred to in these columns.

**The Banding Outfit.**—For convenience I made up the outfit here shown in figure 33. When packing the box, the larger band-holder is made to fit snugly in the bottom, where it should remain even when in use. Over this lies a folded piece of canvas, about two feet square, useful for covering traps or collecting boxes when birds are wild. Many other uses are found for it, especially in wet weather. It also keeps the bands from rattling when the box is being carried. Above these again lies a paste-board box in which are kept the tools: pliers, knife, three-cornered file, pocket lens, note-book, etc.

Alongside this box lies a tin box band-holder, one or more as required, for large adjustable bands. If going far from home, there is still just enough room for Ridgway's Color Standards to fit nicely on the top. The whole weighs about 5 pounds and measures 9″ x 10″ x 3½″.

The band-holders themselves are easily made at home. The larger is roughly eight inches square. The band wires are hinged by a single turn over a stouter wire. The stouter wire is passed through the ends of two short pieces of lath, which make the sides of the holder, and each end of this wire is given a turn down to hold it in place. The other ends of the laths are screwed to a piece of hardwood with saw-cuts in it, to receive the free ends of the smaller wires that hold the bands. The tin box-holder for the largest size bands is a pepper tin. It will be noticed that a portion of the tin that has been cut out to admit the bands, is turned down at the bottom of the box, and the same is done in the lid, but turned up. Over these projections, and on either side of the box go elastic bands, to keep the lid on.

**The Curtain Trap.**—This I call my no. 1, as it was the first trap I made in an endeavor to ease the shock of the common drop trap.

As may be seen in figure 34, it is really a common drop trap held up in a set position, with sides filled in, one with wood, one with wire, and a drop curtain of light canvas which falls silently at the pull of a string. I found that covering one side with

Fig. 34. THE CURTAIN TRAP WITH CURTAIN DOWN, AND TWO OTHER VIEWS SHOWING CURTAIN RAISED. IN ONE THE COLLECTING BOX IS IN POSITION.

wood showed up the entrance to the collecting box, always in position, into which the birds entered at once, saving much fluttering. The wire screen used is what is generally placed around meat-safes to keep out flies. I use this wire on all traps and collecting boxes, excepting the funnel trap mentioned above, and hope to try it on that soon. The curtain is not rolled up but is folded up, when setting the trap, and is held in this position by the stick. A roll curtain is not quick enough. The dimensions of the trap overall are 4′ x 2′ and 16″ high in front, the curtain being 19″ wide overall, but 2″ are around the lath which slides, and 4″ are tacked to the top, making the actual opening covered by the curtain when down about 3′8″ x 14″.

**The Box Trap.**—This trap was suggested by the trap of my younger days; three bricks and a roof slate. The photo, figure 35, shows my Jay size, made from a coal oil box sawn in half lengthwise, giving me two traps. I have made them down to Junco size, some six inches square, when a shingle serves as a lid. These latter have the front of wire, but have one bad fault; if long-tailed birds try too small a trap they are likely to lose their tails. On account of this I am giving up the small ones and intend to stick to the Jay size only. These will work just as well with the smaller birds, only on account of the necessary extra depth are not so popular.

The great advantage of this trap is, that if away from home and a trap is wanted, a box may be obtained from the nearest grocer, and a pocket knife will put the trap in working order. Almost any sort of box will do.

To remove the bird, lay the trap on its side, place the collecting box opposite the lid, and draw the latter out after pivoting it carefully till it lies against the collecting box. If the opening of the trap is found to be greater than that of the collecting box, cover this space with the canvas cover or a hat.

Fig. 35. THE BOX TRAP. IT IS IMPORTANT THAT THE LID BE LONG ENOUGH TO FALL ONTO THE END OF THE BOX, NOT INTO THE BOX, WHEN THE TRIGGER FALLS.

**Collecting Boxes.**—Finding that the all-wire collecting cages were too hard on birds, I made those shown in figure 36. They have done their work nobly for nearly

Fig. 36. COLLECTING BOXES.

two years, in all weathers, so look somewhat dilapidated. The top and one end are of meat-safe wire screen. The larger is about 12″ x 12″ x 7″. The smaller is about 10″ x 6″ x 5″.

G. D. SPROT, *Mill Bay, Cobble, Vancouver Island, B. C., March 19, 1925.*

**Return of Banded Birds Removed to a Distance.**—My banding station at Third and Yale streets, Claremont, California, 1200 feet altitude, is about eleven miles by air line from Camp Baldy, 4700 feet altitude, in the San Gabriel Mountains. Drainage from Camp Baldy is toward Claremont, through six miles of canyon with a "hog's back" blocking the canyon about midway, except for a narrow gorge. Claremont is about two miles out from the nearest foothills, on a gentle slope.

At 6:00 A. M. on March 10, 1925, twelve Gambel Sparrows which had been captured and banded at Claremont were released at Camp Baldy. Down to date, four from these twelve have been recaptured at Claremont as follows:

| | | | | | |
|---|---|---|---|---|---|
| 145702 | March 12 | 5:00 P. M. | 147192 | March 19 | 7:30 A. M. |
| 147647 | March 17 | 8:45 A. M. | 145628 | March 21 | |

To carry the experiment farther, twenty of the same species, captured at Claremont, were released March 18, ten miles east of Victorville, on the Mohave Desert and on the opposite (north) side of the San Gabriel Range, about fifty miles by air line northeast from Claremont. None of these have reappeared as yet, which is perhaps not surprising, since migrating waves of this species are now moving north.

The behavior of these twenty birds on being released is of interest. Five flew to the ground and immediately started feeding. The other fifteen flew up into the air 50 to 75 feet and headed out across the desert in the direction of Claremont.—WRIGHT M. PIERCE, *Claremont, California, March 23, 1925.*

NOTE. When sufficient time has elapsed for complete returns from this experiment, and it will not be complete until the life cycle of these birds is ended, it will be of interest to analyze the result in the light of the recorded residence of the birds at the Claremont station. Different results might obtain with birds removed when first captured (if approximately at their first appearance at the station) from those obtaining with birds which had long partaken of the bander's food table. In any case, the results here recorded indicate a definite and blind orientation toward a chosen winter habitat, whether or not the magnet be an attractive supply of food.—J. E. L.

**Remarkable Localization.**—Early reports from two groups of stations seem well worth summarizing. From a total of 153 Gambel and Nuttall sparrows banded in the winter of 1923-24 by John McB. Robertson at his station near Buena Park, California, 44 returns have already appeared; 211 more were banded in the winter of 1924-25, up to March 21. James A. Calder has actively operated a station approximately ⅜ of a mile northwest of Robertson's since September 23, 1924. Both stations are situated in the midst of an alluvial plain devoid of nearby topographic variation. Calder has banded 146 Gambel and Nuttall sparrows at his station during the 1924-25 season. Not one of Robertson's "Zonos" has been captured at Calder's station, and just one of Calder's has been taken at Robertson's station. In other words, of 510 sparrows banded only one has found the second station ⅜ of a mile away.

At Claremont, California, the stations of Wright M. Pierce, Ernest Osborne and Selwyn Rich form a triangle, the sides of which are about 3, 2, and 4 city blocks long, respectively. Of 898, 145, and 164 Gambel Sparrows banded at their respective stations to March 23, 1925,

Pierce has captured 1 banded by Rich and 4 banded by Osborne,
Rich has captured 5 banded by Pierce and 3 banded by Osborne, and
Osborne has captured 4 banded by Pierce and 2 banded by Rich.

In other words, out of 1207 banded in 13 months, only 19 have so far forgotten themselves as to register at a station four blocks, or less, away.

**The Pattern of Feathers.**—Perhaps no factor in the life economy of a bird exhibits more extraordinary intricacies and marvels of creative art than does the pattern of its feathers. We contemplate the blended ensemble with the utmost admiration. But one who has not plucked the feathers from a bird, feather by feather, and examined their pattern as separate feathers and in relation to other feathers in the same tract and in other tracts, has in store for himself a whole new story in nature.

Banders, handling birds in series unheard of in collections, naturally find themselves analysing color pattern, color tones, and individual variation, and many are already looking for standards by which these values can be appraised. Obviously, an ample series of study skins, ready at hand for use in comparisons, helps to tie in these differences. Obviously, too, no series of skins possessed by any one collection is ample for this purpose.

While it is too early to hope for conventional standardization of observations on color and pattern made from live birds in hand, one's ability to analyse his observations is bound to be enhanced by more intimate studies of the individual feathers. Anyone who comes into possession of a dead bird may spread the feathers, plucked in order of attachment, on white paper, and fasten them there by means of narrow strips of adhesive tape, and then study them at his leisure.

For my own mounts, I use smooth white sheets of a rather heavy ledger bond, cut 8½ x 11 inches (letter-head size). Perhaps document size, 8½ x 14 inches, would be better. Folders, such as are used in vertical files for letters, serve as containers, a folder for each species. Adhesive plaster, manufactured for chiropodists, can be obtained in ⅛-inch strips wound on 2-inch spools. This tape can readily be cut into 1/16-inch strips for the smaller feathers. Strips of gummed paper might do as well and would perhaps be more permanent. A pair of slender tweezers and a pair of long scissors completes the outfit.

One can keep these mounts filed vertically in a tight box or drawer of proper size, but should bear in mind that insect pests, if not guarded against, will destroy the feathers. Fresh naphtha flakes liberally used in the box seem to be a deterrent, but will not drive out an insect once it has reached its food. Naphtha probably only obscures the scent by which insects find their food. One should fumigate occasionally with a thoroughly volatile carbon-bisulphide.

When one brings together in this way the same sets of feathers from different individuals of the same species, even when the birds come from the same locality, he is early impressed with the quantity and quality of individual variation. He must be impressed, too, with the independence in pattern and contour design between the sets of feathers from different tracts on a single bird, and with the prevalence, usually, of a certain pattern and contour type throughout any particular set. Shape or contour and pattern design of feathers exhibit almost endless variety, even on a single bird, and the shape, width, and length of any certain feather frequently differs appreciably in different birds that on casual examination would be pronounced alike.

Sample sheets, presenting certain interesting types of feathers, are shown herewith. One cannot, of course, be too careful in allocating the feathers he plucks to the proper tract series. For instance, the outer or tenth primary in many fringillids is smaller than its own tiny covert. In some species, one may easily confuse the tertiaries with their coverts and wonder whether the alula series are, a part of them, coverts.

**Molt.**—The study of feather pattern and of molt run hand in hand. Each set of feathers on a bird's body proceeds with its molt in a manner more or less independent of the other sets or tracts. Particularly is this true of the wings and tail.

We may assume that the order of procession follows a scheme formulated by the phylogenetic relationships of the individual under study. It is of value, therefore, in examining a molting bird, to record in one's note book exactly what appears, to the minutest detail, and to continue to record such details in bird after bird of the same species. Observations on a single individual had best not be accepted as conclusive without repeated confirmations from other individuals of the same species.

Note from which part of a series renewal begins and where it ends and the relative progress of the molt in different tracts. One has no trouble in differentiating the fresh-pigmented new feathers from the abraded and faded old ones. Some banders have been fortunate enough, already, to retake individuals more than once during a molt and thus to obtain data on the speed of feather growth.

One who seriously undertakes a study of molting birds will do well to use wide sheets, one for each species, with columns ruled off and headed for each feather tract. Thus, using a single line for a band number, comparisons are readily made between individuals, since data on any tract is all in the same column. Date, age, and sex should, of course, appear with the band number.

Then there is the progressive change of plumages, wherein the same follicle is called upon to produce, first, a down feather of the natal plumage, then a feather of the juvenal plumage, then one of the adult plumage. Some continue the change by providing a feather of an eclipse plumage, alternating between feathers of successive breeding plumages. Much is to be learned from accurate recording of exact feather patterns in individuals whose type of feather changes with age, and whose particular life changes can now be traced by repeated readings of their identifying bands.

Naturally, the feathers of the wing and tail are easiest kept track of. A ready method of recording these details, suggested by Mrs. Ella H. Ellis, of Los Angeles, California, is a rapid sketch of a conventional wing and tail on which one notes the proportionate size of each growing feather. If one lets the white spaces represent old feathers, and darkens spaces to represent the growth of new fathers, with an extensive "X" denoting absent feathers, he can visualize at a glance the molt condition of a wing or tail. In like manner he can record pattern details for comparison with subsequent plumages of the same bird.

The Western Bird Banding Association is preparing a sheet with a conventional outline sketch for each aspect of the bird, and with each feather tract indicated and named. If the response in membership to this new Association warrants the expense outlay, these sheets should be ready by the time this article appears. They will be distributed at nominal cost to those who desire to coöperate in the study of molts. One need only mark on the sheet the new and absent feathers. Pin or tiny feathers on any of the tracts can readily be indicated.—J. EUGENE LAW, *Altadena, California, March 28, 1925.*

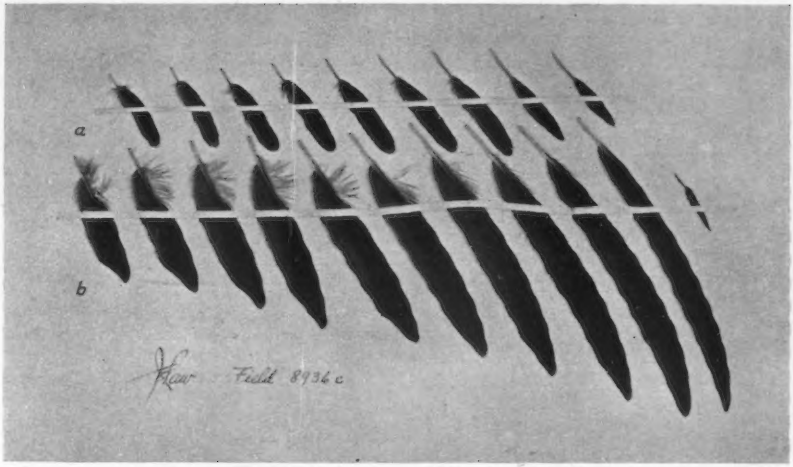


Fig. 37. FEATHERS FROM THE RIGHT WING OF A VAUX SWIFT. I.

a. Greater coverts of primaries.
b. Primaries. Note that there are 11 primaries, if the rudimentary outermost one be counted in. The eastern Chimney Swift also has this abortive outer primary. X½+.

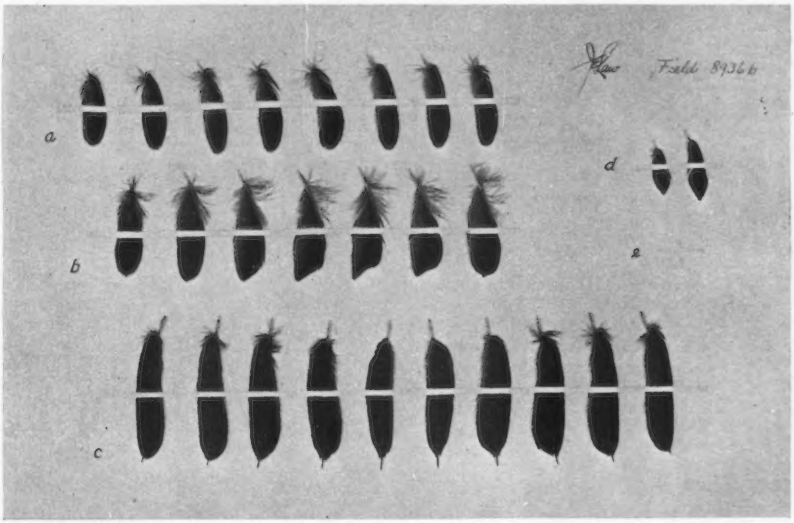


Fig. 38. FEATHERS FROM THE RIGHT WING AND THE TAIL OF A VAUX SWIFT. II.

a. Greater secondary-tertiary coverts. Perhaps the one on the left is a tertiary.
b. Secondary-tertiary series of remiges. Note the peculiar configuration of some of them.
c. Rectrices. Note the spine-like tips.
d. Alula set.
e. A filoplume, probably too faint to detect in the reproduction. X½+.

# EDITORIAL NOTES AND NEWS

A section of the ornithological field on the Pacific Coast now unoccupied is that dealing with migration. There is badly needed a leader for the development of this subject, someone gifted to handle vast masses of facts systematically and accurately. The problems here are doubtless not altogether the same as those east of the Rockies, where practically all of the American work on migration so far has been done. Here in the West we have the factor of altitude complicating the influence of latitude. It is even possible that certain currently held theories of migration would be upset by conclusions from studies in the topographically diversified West.

The annual Cooper Club "roster" appearing in this issue of THE CONDOR shows a total membership of 859. This is in considerable excess of any previous year's total and betokens a further significant extension in the serious interest being taken in the study of birds. Ornithology as a mental recreation, as an intellectual stimulus, is being more and more generally taken up among people who are very busy otherwise with affairs of importance.

## COMMUNICATIONS

### A SOCIETY TO PROTECT WILD LIFE FROM THE PROTECTIONISTS

Editor THE CONDOR:

Your attention is hereby called to a certain class of people, who, believing themselves ardent conservationists, are by their extreme position in advocating all-embracing protection frustrating the aims for which they are striving. It appears to some of us that a little more of such misdirected energy will force us into founding a society to protect wild life from the protectionists.

Excellent examples of the manner in which this all-protection is working were given about a year ago in the Canadian Field-Naturalist, showing that protected Western Gulls, Hawks, Owls, and Crows are defeating the very object for which certain bird sanctuaries have been established.

Another illustration of an extremity in words, if not in action, to which some protectionists have gone is furnished by the revised constitution of the conservation society of one of our states in which appear these words: "The objects of the association are:

I. To protect, develop and conserve Iowa's natural resources, viz:
   (a) All native plants, trees and forests;
   (b) All native birds, fish and animals;
   (c) All streams, lakes, rivers and waterways;
   (d) All spots of scenic and historic interests."

Since with only four dissenting voices this revision was adopted, one is constrained to seek an explanation. Perhaps it is because Section 1 looks like blank verse, perhaps it is blank verse (the poet must decide that). It certainly looks blank: to some people distressingly blank, to others profanely blank.

In this state in which most of the conservationists pledged themselves to protect, develop and conserve poison ivy, ragweeds, milkweeds, rattlesnakes, woodchucks, cotton-tail rabbits, pocket gophers, ground squirrels, potato bugs, May beetles, squash bugs, cutworms, and army worms, in 1924 in one county there were paid bounties on 4139 pocket gophers and on 976 rattlesnakes; two fur buyers shipped 6000 pelts; and a farmer in his corn-field shot from his tractor 45 thirteen-lined spermophiles. All this happened when never a pledged protectionist was near to save his pet gopher or rattlesnake. Since the bearing of children went out of fashion, the small boy with his traps has faded from the landscape; because of this fact, taken together with the high cost of labor and the removal of the bounty on the woodchuck, this pest has been permitted to increase amazingly. Meanwhile the countryman remains tranquil, knowing full well that the closet conservationist, which is the city man, will be the first to die from starvation when his protected pets have destroyed all the crops.

This attempt at all-protection reaches its peak when certain of its persuasion become fiercely hostile if one says the House Wren is a menace or that the English Sparrow is unlovely; they can not endure to hear the truth told. A forceful example of this type was presented by a feeble-minded one, who ordered her bird magazine stopped because the editor had classed the English Sparrow "with noxious weeds, undesirable, vicious and altogether unwelcome."

Worse than woodchucks and rattlesnakes for mankind is the House Wren for the survival of many of our most valuable and beautiful small bird species; their arch-enemy is doubly protected: by the law and by the ever present wren-box with its small hole which enables him to breed without restriction. Here Dr. Hornaday may find another proof for his statement that "Beyond question we are exterminating our finest mammals, birds and fishes *according to law*". This protection, that has permitted the House Wren to increase until he has become a deadly menace, has been afforded him through ignorance more often than otherwise, sometimes through forgetfulness, and frequently through skeptical obstinacy. It has been a case of the blind leading the blind. An instance of this blind leadership was met with in the person of a "lecturer on birds" who had been in the lecture field for several seasons. When the destructive nature of the House Wren was mentioned, she said "I never heard of the House Wren." A few words of explanation having been given she exclaimed "Oh, I know now what you mean! *You* call that a House Wren; I never knew that *any one ever* called it a House Wren; *I* always call it a Jennie Wren." Thousands upon thousands are following the ignorant leadership of persons who know absolutely nothing of the harmful character of this Wren, even though some of them are able to recognize the bird under its common name.

For a quarter of a century the bird magazines, but more especially *Bird-Lore*, have been publishing accounts of this Wren's raids on the eggs of other species. The testimony of some, as for example that of Mr. Robert Ridgway, which has been oft repeated and of the most convincing type, has been allowed to pass from memory or has met with skeptical obstinacy on the part of those who choose to be utterly deaf to the truths told concerning the depredations of the House Wren, that are fast decimating the ranks of several species of birds formerly common in our dooryards.

A campaign is now in progress to awaken the public to a realization of the dangers threatening the very existence of several small bird species, because of the robber Wren, that despoils their nests of eggs; because these robberies are not often witnessed many people are skeptical. Help is needed in this work of awakening. It is desirable that those who have seen him destroying eggs should testify. If ever it is necessary to form a society to protect wild life from the protectionists, it will be because the House Wren has emphasized the necessity; and because people, having been taught of his evil ways, still refuse to discontinue the protective boxes that have favored an enormous increase of a species that ought never to be tolerated about our homes where inoffensive birds are encouraged to come.— ALTHEA R. SHERMAN, *National, via McGregor, Iowa, February 19, 1925.*

### JUVENILE NOMENCLATURE

Editor THE CONDOR:

I asked some school children to give me lists of California birds the other day, and I have culled the following as being possibly previously unknown to you.

| | |
|---|---|
| honey sukle | audible warbler |
| bzerd | muthacher |
| bocker bird | budzer |
| sprils and song sprils | slowl hawk |
| horn owl | morning |
| eanch | brown beard |
| bizird | blewbeard |
| hornet | black bier |
| he-toe-bird | blow bier |
| flinch | chick and hawk |
| bozer | moping bird |
| readpacker head | bonebird |
| jases | bockbird |
| born owl | moucking |
| barnwoll | raves |
| wole | ranbon |
| blewjae | children's hawk |
| waxtail | blow jay |
| sane piper | moucher |
| malking bird | sam hill owl |
| water oozle | mud slowl |

One recognizes most, of course, as relatives of our already known species. The *blow jay* is often about when one wants to be unobserved. The *sane piper*, one imagines, would not be placed in the same family with the highland piper—certainly not with the *raves*. But the *children's hawk* appeals to all as a very desirable addition to our avifauna. So does the *audible warbler*. A warbler cannot be too audible, to my fancy. And when in wanton mood, what more desirable companions than the *sam hill owl*, the *born owl*, and the *water oozle*. But not the *hornet!* The *black bier*, the *bock-bird* and the *blow bier* are evidently related—heady stuff. The *bonebird* would, one imagines, be lacking in intelligence—not so lively, for instance, as the *he-toe-bird*. The *chick and hawk* is evidently an example of symbiosis. One seems to remember having seen the two birds together. As for the *eanch*, the *bzerd*, the *bozer*, the *jases*, the *wole*, the *barnwoll*, the *mud slowl* and *slowl hawk*, the *ranbon* and the *moucher*—why, one feels that one has just *got* to make the acquaintance of these fascinating members of the class Aves at his very earliest convenience.— DELACOURT DELL, *Claremont, California, February 23, 1925.*

## PUBLICATIONS REVIEWED

CORY AND HELLMAYR ON BIRDS OF THE AMERICAS.[1]—In a preface by Dr. Wilfred H. Osgood, Curator, Department of Zoology, we are informed that manuscript for the present part of the series projected to cover the birds of all the Americas, was left at the death of Mr. Cory in an advanced stage of preparation, but that it has required considerable revision. In fact the original manuscript has been so revised and extended that responsibility for it rests entirely with Dr. Hellmayr. It needs but hasty comparison of the present work with the two preceding volumes to realize the amount of information that Dr. Hellmayr has added to the synonymy in addition to the full and abundant footnotes that appear over his initials.

The three families of mesomyodian perching birds here treated are wholly Neotropical, none of their species penetrating within the present limits of the A. O. U. Check-list. The volume constitutes a valuable and careful revision of these groups, of which the Formicariidae in particular form one of the most difficult families of birds. Treatment is in accordance with the scheme outlined by Cory. The accepted name for each form is followed by synonymy of important titles, the range, and a statement listing specimens found in the collection of the Field Museum. Frequent footnotes give the characters distinguishing various forms, discussion of specimens, notes on range or geographic variation, and measurements. These, taken with citations of published localities, based on Dr. Hellmayr's extended studies in the museums of Europe and of this country, constitute a mass of information of the greatest value to the worker in Neotropical birds.

Generic treatment on the whole is conservative; the Pteroptochidae are listed under 10 genera which cover 37 species and subspecies, the Conopophagidae have 2 genera for 20 species and subspecies, and the Formicariidae 55 genera for 509 species and subspecies. The latter group is divided into two subfamilies, the Formicariinae with 421 forms, and the Myrmotheriinae with 88. Many genera named in recent years are relegated to synonymy, only those that seem to have well-marked characters being accepted.

Subspecific relationship is assigned on broad lines, intergradation being assumed in many cases where it is not definitely known. Criticism of subsequent workers will probably bear strongly on this fact, as individual opinion varies as to what are valid specific and subspecific differences. As an example may be cited the case of *Thamnophilus gilvigaster* and *T. caerulescens*, which with their races are all given as forms of *caerulescens*; though very closely allied, in the eye of the reviewer, the two groups are specifically distinct.

Through an unfortunate interchange in the key to families (p. 1) the form of the sternum is wrongly given, as it is four-notched in the Conopophagidae and Pteroptochidae, and two-notched in the others. Also (p. 2) the Phytotomidae have a crest which, though unlike that of the Rupicolidae, is very distinct. The genus *Rhoporchilus* Ridgway, given (p. 166) as a synonym of *Melanopareia* Reichenbach, is unquestionably distinct. The latter group as rightfully restricted belongs in another family, the Pteroptochidae. *Ramphocaenus* (p. 205) and *Microbates* are included in the Formicariidae with a footnote calling attention to Miller's claim of a separate family for them. As a matter of fact the Ramphocaenidae are an oscinine, not a tracheophone, group.

Generic synonyms are fairly complete, though in some cases emendations have been omitted and in others included. Under *Cymbilaimus* for example, we miss *Cymbilanius* Sclater, 1854, and *Cymbolaemus* Cabanis and Heine, 1859; while in *Formicarius* there is omitted *Myotthera* Spix, 1824, and *Myothera* d'Orbigny and Lafresnaye, 1839. In many other cases such spellings are cited. Though sometimes useful, their omission is not of great importance.

In numerous species attempt has been made apparently to align races in geographic sequence so that one or more subspecies may be given ahead of what is usually considered the typical one,—that is, the one that bears a repetition of the specific name as its trinomial. This follows out a tendency seen in various recent distributional treatises where perhaps it may serve some purpose, though such practice in a monographic work jars on our sense of order, and may prove confusing.

The following are described as new (by Hellmayr): *Scytalopus latrans* (p. 11), *Thamnophilus unicolor grandior* (p. 84), *Thamnophilus punctatus leucogaster* (p. 94), *T. p. pelzelni* (p. 96), *Melanopareia*

[1] Catalogue of Birds of the Americas, Pteroptochidae, Conopophagidae, Formicariidae, by Charles B. Cory, Late Curator of Zoology, revised and continued by Charles E. Hellmayr, Associate Curator of Birds, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 3, Nov. 20, 1924, pp. i-viii, 1-369, 1 plate in color.

*torquata rufescens* (p. 167), *Sclateria naevia toddi* (p. 253), and *Phaenostictus mcleannani pacificus* (p. 321). There is also a new genus, *Sipia*, instituted (p. 224) with *Pyriglena berlepschi* Hartert as type.

The entire volume shows great care in preparation and is practically free from typographical errors, an excellence that extends even to the multitude of Spanish and Portuguese place names. Investigations of literature and type specimens have led to a considerable number of changes in current concepts, but in each case only necessary shifts have been made, and action taken has been directed to avoid needless changes wherever possible. Dr. Hellmayr has produced a work of maximum worth, one that embodies a vast amount of research, and one that will be standard for many years.— ALEXANDER WETMORE, *National Zoological Park, Washington, D. C., March 5, 1925.*

## MINUTES OF COOPER CLUB MEETINGS

### SOUTHERN DIVISION

JANUARY.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held at the Southwest Museum, January 29, 1925, at 8 P. M. with an attendance of about fifty members and guests. President Wyman called the meeting to order. Minutes of the December meeting were read and approved, followed by the reading of the Northern Division minutes for December.

The following names were proposed for membership: Mrs. Helen P. Everhart, 99 S. Meredith, Pasadena, California, by J. Eugene Law; Arthur Goldfrank, 1107 S. Windsor Blvd., Los Angeles, by L. E. Wyman; Egbert R. Jones, Box 338 A, Ceres, California, by J. Eugene Law; Clifford Marburger, Denver, Lancaster County, Pennsylvania, by J. Eugene Law; George Doveton Sprot, Cobble Hill, Vancouver Island, B. C., by J. Eugene Law.

Election of officers for the coming year was then in order. At the December meeting of the Club, the present officers were nominated. The chair called for other nominations and there being none, on motion of Dr. Miller, duly seconded, it was voted that the secretary be instructed to cast the ballot for the continuance of the present officers.

A communication from the Association for the Advancement of Science was read, requesting the appointment of two members to represent the Southern Division on the Affiliation Committee soon to meet at San Francisco. Mr. Law's recommendation that the members appointed by the Northern Division be asked to also represent the Southern Division was seconded by Dr. Miller and duly carried.

Dr. Charles W. Townsend, of Boston, a well-known ornithologist, was a guest of the club, and told briefly of his recent trip through Arizona.

The main speaker of the evening was Dr. Loye Holmes Miller. In his talk, "Fossil Birds down to Date", he explained the connection of fossil birds with birds of the present and future. Various fossil-bearing beds in California were described and the species found in each locality mentioned. A splendid specimen of a fossil booby was shown, as well as some interesting photographs.

Adjourned.—ELLA H. ELLIS, *Secretary.*

FEBRUARY.—The Southern Division of the Cooper Ornithological Club held its regular monthly meeting at the Los Angeles Museum, Exposition Park, Thursday, February 26, 1925, at 8 P. M. Members present were Misses Johnson and Potter; Mesdames Ellis, Everhart, Law, Warmer; Messrs. Allen, Appleton, Bishop, Chambers, Colburn, Johnson, Lamb, Law, Michener, Reis, Rich, Howard Robertson and J. McB. Robertson. Visitors were Misses Law and Marsh; Mesdames Bishop, Lamb, Law, McVitty and Reis; Messrs. Chambers and Webster. In the absence of Mr. Wyman, Dr. Bishop, as vice-president, called the meeting to order. Minutes of the January meeting were read and approved, followed by the reading of the January minutes of the Northern Division.

Applications for membership were as follows: Mrs. Gertrude Strong Achilles, Fountain Oaks, Morgan Hill, California, by W. Lee Chambers; Stuart Taylor Danforth, Laboratory of Ornithology, McGraw Hall, Ithaca, N. Y., by W. Lee Chambers; Geo. L. Davy, Antler, North Dakota, by W. Lee Chambers; William Jay, 12 Westview Ave., Mt. Airy, Philadelphia, Pennsylvania, by W. A. Strong; H. N. Kennedy, 103 East Grand Blvd., Detroit, Michigan, by W. Lee Chambers; Harry C. Monk, Avoca Apts., Nashville, Tennessee, by W. Lee Chambers; Wallace Havelock Robb, Honorary Game Warden of Canada, 371 Aqueduct St., Montreal, Quebec, Canada, by W. Lee Chambers; Dr. Charles W. Townsend, 98 Pinckney St., Boston, Massachusetts, by Donald R. Dickey; Frederick S. Webster, 114 South Bonnie Brae, Los Angeles, California, by Albert E. Colburn.

After reading a telegram sent by Mr. Wyman to Senators Johnson and Shortridge, asking their support of the Public Shooting Ground Game Refuge Bill, now before Congress, Mr. Law moved that the Club ratify Mr. Wyman's action in sending this message. This was seconded by Mr. Robertson and unanimously carried. An answer received from Senator Shortridge stated that the matter would be given careful consideration.

After some discussion of parasites, the Club had the pleasure of hearing from Mr. Chester Lamb an account of some of his experiences in the Cape region of Lower California. Mr. Lamb has recently spent two years in that section of the country and plans to return in a few days.

Adjourned.—ELLA H. ELLIS, *Secretary.*

NORTHERN DIVISION

FEBRUARY.—The regular monthly meeting of the Cooper Ornithological Club, Northern Division, was held at the Museum of Vertebrate Zoology on February 26, 1925, at 8 P. M. President Lastreto occupied the chair and there were more than sixty members and guests in attendance.

Minutes of the Northern Division for January were read and approved. Minutes of the Southern Division for January were read. The following proposals of names for membership were read: Ada B. Corwin, Hot Springs, Tulare County, California, by H. S. Swarth; Charles A. Harwell, Berkeley, Calif., by H. C. Bryant; Harvey H. Jesser, Oakland, Calif., by C. Gignoux; Keble B. Perine, Berkeley, Calif., by J. Grinnell.

By request from the chair, Mr. A. S. Kibbe presented the following resolution and moved its adoption:

RESOLVED, that the Cooper Ornithological Club deplores the delays which have postponed the adoption of a program for unified scientific treatment, throughout the nation, of the biologic and economic problem of sustaining and conserving our migratory birds, and

FURTHER RESOLVED, that the Migratory Bird Refuge Act embodies all the essential features of such a program and should be enacted at the earliest possible time, and

FURTHER RESOLVED, that the Secretary be requested to telegraph a copy of this resolution to our Senators, Hiram W. Johnson and Samuel M. Shortridge, enlisting their active efforts to the accomplishment of this object.

Mr. Kibbe's motion was seconded by Dr. Badè and unanimously passed. Mr. Joseph Mailliard, reporting from the Committee of Affiliated Societies, suggested that the chair appoint a delegate from the Northern Division of the Cooper Club to attend the Portland meeting of the Pacific Division of the American Association for the Advancement of Science.

The evening's talk was by Dr. Charles W. Townsend, of Boston, Massachusetts, physician, ornithologist and author. Dr. Townsend had chosen as his topic "On the Labrador Coast", and he illustrated his talk with lantern slides. On one of his visits to Labrador, in 1915, Dr. Townsend followed the route taken by Audubon in the year 1833, and his talk and slides brought the Labrador of Audubon clearly before his audience. Audubon's plate of the Lincoln Sparrow with its background of laurel and Labrador tea, young Tom Lincoln himself, views of the Montagnais Indians dressed and capped just as they were three generations ago, bird rookeries and inland harbors, all contributed to illustrate a talk of intense interest to club members. Adjourned.—HILDA W. GRINNELL, *Secretary.*

## DIRECTORY OF MEMBERS OF THE COOPER ORNITHOLOGICAL CLUB

Revised to April 15, 1925

### OFFICERS

NORTHERN DIVISION

C. B. Lastreto, President
Amelia S. Allen, Vice-President
Hilda Wood Grinnell, Secretary

SOUTHERN DIVISION

L. E. Wyman, President
Dr. Louis B. Bishop, Vice-President
Ella Haines Ellis, Secretary

EDITORS

Joseph Grinnell
Harry S. Swarth

BUSINESS MANAGERS

J. Eugene Law
W. Lee Chambers

ENDOWMENT SECRETARY

Donald R. Dickey

BOARD OF GOVERNORS

J. Eugene Law, President
Tracy I. Storer, Permanent Secretary

The above officers, together with the following ex-presidents (not included above, all those whose membership has been continuous since incumbency), constitute the Board of Governors of the Club.

Ralph Arnold, Harold C. Bryant, Henry W. Carriger, Herbert L. Coggins, J. S. Cooper, Joseph S. Dixon, Barton Warren Evermann, Walter K. Fisher, Ozra W. Howard, W. B. Judson, Joseph Mailliard, Loye H. Miller, G. Frean Morcom, Wilfred H. Osgood, Wright M. Pierce, Guy C. Rich, Howard Robertson, Curtis Wright.

### MEMBERS

In the following roster, year following address indicates date that member joined the Club; year in parenthesis indicates date member became hon-

orary or life member. Asterisk (*) preceding indicates life member; § indicates contributor to Endowment Fund.

HONORARY MEMBERS

*§Bailey, Florence M. (Mrs. Vernon), 1834 Kalorama Road, Washington, D. C. 1910 (1920) (1920).
Fisher, Dr. A. K., Biol. Survey, Washington, D. C. 1904 (1924).
Henshaw, Henry W., Biol. Survey, Washington, D. C. 1909.
*§Mailliard, Joseph, 1815 Vallejo St., San Francisco, Calif. 1895 (1920) (1924).
Merriam, Dr. C. Hart, 1919 16th St., Washington, D. C. 1909.
*§Morcom, G. Frean, 243 N. Coronado St., Los Angeles, Calif. 1904 (1915) (1922).
Nelson, Dr. E. W., Biol. Survey, Washington, D. C. 1904 (1917).
Ridgway, Robert, Route 7, Olney, Ill. 1905.
§Stephens, Frank, Natural History Museum, Balboa Park, San Diego, Calif. 1894 (1912).

ACTIVE MEMBERS

Abbott, Clinton G., Nat. Hist. Museum, Balboa Park, San Diego, Calif. 1921.
Abernathy, Frieda (Mrs. St. E.), 1726 Virginia St., Berkeley, Calif. 1914.
Abernethy, Mrs. Martin, Box 282, Claremont, Calif. 1925.
Adams, Benjamin, Wethersfield, Conn. 1920.
Adams, Frank O., Canfield, West Vancouver, B. C. 1922.
Adams, Miss Romola M., 912 Linden Ave., Long Beach, Calif. 1921.
Aitken, Drummond, 766 Milwaukee St., Denver, Colorado. 1924.
*Alexander, Miss Annie M., Suisun, Calif. 1908 (1923).
Allen, Mrs. Amelia S., 37 Mosswood Road, Berkeley, Calif. 1913.
Allen, Dr. Arthur A., McGraw Hall, Ithaca, N. Y. 1911.
Allen, Walter I., Lamanda Park, Calif. 1922.
Anderson, Mrs. Malcom P., 343 East 18th St., New York, N. Y. 1920.
Anderson, Dr. Rudolph M., Biol. Div., Victoria Memorial Museum, Ottawa, Ont., Canada. 1916.
Anthony, A. W., Nat. Hist. Museum, Balboa Park, San Diego, Calif. 1921.
Anthony, Mrs. Joseph, 1208 Fuller Ave., Hollywood, Calif. 1922.
Applegate, Elmer I., Klamath Falls, Ore. 1921.
*Appleton, J. S., 1332 Citrus Ave., Hollywood, Calif. 1901 (1919).
Archilles, Mrs. Gertrude Strong, Fountain Oaks, Morgan Hill, Calif. 1925.
Armstrong, Edward E., 2249 Calumet Ave., Chicago, Ill. 1914.
Arnold, E., Grand Trunk Ry., Montreal, Que., Canada. 1909.
Arnold, Mrs. Lewis, Box 61A, Fair Oaks, Sacramento Co., Calif. 1921.
Arnold, Dr. Ralph, 639 S. Spring St., Los Angeles, Calif. 1893.
Atkinson, W. L., 35 Hawthorne Way, San Jose, Calif. 1901.
Atsatt, Miss Sarah R., 345 S. Serrano Ave., Los Angeles, Calif. 1911.
Austin, Miss Dorothy K., 85 S. Madison Ave., Pasadena, Calif. 1921.
Averill, Charles Ketchum, 1075 Iranistan Ave., Bridgeport, Conn. 1922.
Ayres, Miss Margarite, 1564 Commonwealth, West Newton, Mass. 1924.
Badè, Dr. Wm. F., 2616 College Ave., Berkeley, Calif. 1903.
Badger, M. C., Santa Paula, Calif. 1915.
Bailey, Alfred M., Colo. Museum Nat. Hist., Denver, Colo. 1917.
Bailey, Bernard, R. D. 1, Elk River, Minn. 1911.
Bailey, H. H., Box 5, Miami Beach, Miami, Fla. 1903.
Bailey, Vernon, 1834 Kalorama Road, Washington, D. C. 1904.
Baker, Chas. H., 594 13th St., Oakland, Calif. 1921.
Baker, Milo S., Kenwood, Calif. 1923.
*§Baldwin, S. P., 11025 East Boulevard, Cleveland, Ohio. 1920 (1920).
§Bales, Dr. B. R., 149 W. Main St., Circleville, Ohio. 1906.
Ball, Wm. H., Eureka, Calif. 1922.
Ballard, Mrs. Maria V., 295 12th St., Portland, Ore. 1919.
Bamford, Mrs. G. L., 1428 Castro St., Oakland, Calif. 1918.
Bancroft, Griffing. 2525 First St., San Diego, Calif. 1920.
§Bangs, Outram, Museum Comp. Zool., Cambridge, Mass. 1906.
Barker, Fred, Parkers Prairie, Minn. 1914.
Barnes, C. A., 1815 S. Western Ave., Los Angeles, Calif. 1921.
Barnes, Claude T., 359 10th Ave., Salt Lake City, Utah. 1915.
Barnes, Frances V., 1815 S. Western Ave., Los Angeles, Calif. 1921.
*§Barnes, R. Magoon, Lacon, Ill. 1908 (1921).
Bartlett, Mrs. Adelaide R., Assessor's Office, City Hall, San Francisco, Calif. 1922.
Bassett, F. N., 1338 8th St., Alameda, Calif. 1919.
Batchelder, Chas. F., 7 Kirkland St., Cambridge, Mass. 1910.
Bates, Josephine J., 1267 Sunset Ave., Pasadena, Calif. 1921.
Battles, Carroll David, 2527 S. Dunsmuir Ave., Los Angeles, Calif. 1924.
Baxter, Philip Norman, 159 Churchill Ave., Palo Alto, Calif. 1924.
Baynard, Oscar E., Box 104, Plant City, Florida. 1924.
Beaman, Susan E., 1419 Oxford St., Berkeley, Calif. 1923.
Beattie, S. H., Tubac, Ariz. 1924.
*§Beck, Rollo H., R. D. 21, San Jose, Calif. 1894 (1919).
Bell, B. C., 235 8th St., San Francisco, Calif. 1919.
Benjamine, Elbert, 109 Coral St., Los Angeles, Calif. 1920.

Bennet, Eleanor V. V., 2703 Forest Ave., Berkeley, Calif. 1920.
*Bent, A. C., 140 High St., Taunton, Mass. 1909 (1922).
Benton, Thomas H., Jr., 2136 San Jose Ave., Alameda, Calif. 1916.
Bergtold, Dr. W. H., 1159 Race St., Denver, Colo. 1917.
Berry, Elverton C., Box 234, Conway, New Hampshire. 1925.
Betterley, Bertram O., 2005 2nd St., Eureka, Calif. 1922.
Bicknell, Mrs. F. T., 319 S. Normandie Ave., Los Angeles, Calif. 1913.
Bigelow, Homer L., 37 Old Orchard Road, Chestnut Hill, Mass. 1910.
*Bishop, Dr. Louis B., 450 S. Bradford St., Pasadena, Calif. 1904 (1920).
Blackwelder, Miss Martha Jean, Box N N, Stanford University, Calif. 1925.
Blake, Mrs. Edwin T., R.F.D. 1, Box 34, Berkeley, Calif. 1917.
Blayney, Nita A., 920 O St., Fresno, Calif. 1911.
Blickensderfer, Clark, 850 Grant St., Denver, Colo. 1922.
Bliss, Leslie Edgar, R.F.D. 3, Box 158-A, Pasadena, Calif. 1923.
Bliss, John D., Pozo, San Luis Obispo Co., Calif. 1916.
Boeing, W. E., The Highlands, R. D. 2, Seattle, Wash. 1914.
Bogle, Mrs. Sara S., 2951 Linden Ave., Berkeley, Calif. 1921.
Bolander, L. Ph., Jr., 1947 E. 28th St., Oakland, Calif. 1907.
Bolt, B. F., 1421 Prospect Ave., Kansas City, Mo. 1916.
Borell, Adrey E., 2149 Blake St., Berkeley, Calif. 1918.
Bourne, W. A., Box 27, Yosemite, Calif. 1923.
Bowdish, B. S., Demarest, N. J. 1910.
Bowles, J. H., The Woodstock, Tacoma, Wash. 1903.
Boyle, Ashby D., 380 E St., Salt Lake City, Utah. 1915.
Boyle, Miss Una, Calpella, Calif. 1921.
*§Bradbury, W. C., 1440 Race St., Denver, Colo. 1913 (1914).
Braislin, Dr. William C., 425 Clinton Ave., Brooklyn, N. Y. 1910.
Bramkamp, Richard, Banning, Calif. 1921.
Brandreth, Courtney, Ossining, New York. 1925.
Brandt, H. W., 2025 E. 88th St., Cleveland, Ohio. 1914.
Bremer, Bernhard Charles, 516 Battery St., San Francisco, Calif. 1925.
*Brooks, Allan, Okanagan Landing, B. C., Canada. 1906 (1920).
Brooks, L., Box 539, New Bedford, Mass. 1913.
Brooks, Winthrop Sprague, Boston Soc. Nat. Hist., 234 Berkeley St., Boston, Mass. 1923.
Brown, D. E., 87 Lenora St., Seattle, Wash. 1909.
*Brown, Edward J., Box 99, Eustis, Lake County, Fla. 1915 (1919).
Brown, Mrs. Herbert, 434 E. 2nd St., Tucson, Ariz. 1914.
Brown, Nellie May, 354 North Ave. 53, Los Angeles, Calif. 1922.
Brown, Mrs. Wm. Clark, 413 West 10th St., Dallas, Tex. 1921.
Bruce, Miss Bess M., Glendora, Calif. 1924.
Bruce, Walter, 813 Lincoln Place, Spokane, Wash. 1924.
Bryan, William Alanson, Museum Hist., Sci., and Art, Los Angeles, Calif. 1921.
Bryant, Dr. Carl H., Atascadero, Calif. 1922.
Bryant, Chas. A., Room 1011 S. P. Bldg., 65 Market St., San Francisco, Calif. 1922.
*§Bryant, Dr. Harold C., Museum Vert. Zool., Berkeley, Calif. 1910 (1925).
Buhn, Mrs. Minnie, 3027 60th Ave., Oakland, Calif. 1921.
Bull, Daniel Bernard, 920 Kellar Ave., San Jose, Calif. 1919.
Bunker, Paul F., 1151 Shattuck Ave., Berkeley, Calif. 1922.
Burk, Genevieve S., 1601 Oxford St., Berkeley, Calif. 1920.
Burleigh, Thos. D., Univ. Ga., Athens, Ga. 1918.
Burnell, Miss Elizabeth, 1029 Spaulding Ave., Los Angeles, Calif. 1921.
Burnett, W. L., State Agr. Coll., Fort Collins, Colo. 1910.
Burnham, Dr. Clark, 835 Arlington Road, Berkeley, Calif. 1907.
Burnham, John, Timken Bldg., San Diego, Calif. 1920.
Burns, Frank L., Berwyn, Pa. 1909.
Burns, James R., 645 44th St., Des Moines, Ia. 1922.
Burtch, Verdi, Branchport, N. Y. 1910.
Cahn, Alvin R., 1117 W. Nevada St., Urbana, Ill. 1922.
Cain, Brighton C., 221 Thayer Bldg., Oakland, Calif. 1925.
Calder, James A., Buena Park, Calif. 1917.
Camp, Dr. Chas. L., Bacon Hall, Univ. Calif., Berkeley, Calif. 1909.
Campbell, R. A., R. R. Box 188, Burbank, Calif. 1922.
Canby, Caroline P., 2406 Dana St., Berkeley, Calif. 1921.
Canfield, Mrs. May, 4081 Georgia St., San Diego, Calif. 1922.
Cantelow, Mrs. E. D., Hotel Whitcomb, San Francisco, Calif. 1923.
Cantelow, H. C., Hotel Whitcomb, San Francisco, Calif. 1923.
Cantwell, George G., 7287 Keystone Ave., Palms, Calif. 1915.
Carpenter, George I., 746 Lincoln Place, Brooklyn, N. Y. 1920.
Carpenter, N. K., 3775 Kite St., San Diego, Calif. 1901.
Carriger, H. W., 5185 Trask St., Oakland, Calif. 1895.
Case, Rev. B. F., New Smyrna, Fla. 1913.
Case, C. M., 306 Blue Hills Ave., Hartford, Conn. 1911.
§Chamberlain, C. W., 36 Lincoln St., Boston, Mass. 1912.

*Chambers, W. Lee, Eagle Rock, Calif. 1897 (1919).
Chaney, Dr. Ralph W., 2611 Keith Ave., Berkeley, Calif. 1923.
Chapman, Dr. Frank M., Amer. Museum Nat. Hist., New York, N. Y. 1903.
Cheesman, M. R., 1328 Gower St., Hollywood, Calif. 1919.
Cheney, E. S., 1838 4th Ave., Oakland, Calif. 1920.
Cheney, Miss Mary, 48 Hartford Road, So. Manchester, Conn. 1919.
§Clabaugh, E. D., 2512 Haste St., Berkeley, Calif. 1923.
Clark, Harold W., La Jota, Napa Co., Calif. 1925.
Clark, Josiah H., 702 E. 23rd St., Paterson, N. J. 1910.
Clarke, Mary S., Shadewell, Virginia. 1925.
Clay, C. Irvin, Box 353, Eureka, Calif. 1910.
Cleaves, Howard H., 129 Moffat Road, Waban, Mass. 1921.
Coale, Henry K., Highland Park, Ill. 1907.
Coggins, Herbert L., 2929 Piedmont Ave., Berkeley, Calif. 1910.
Cohen, Donald A., 2618 Lincoln St., Alameda, Calif. 1901.
Cohn, Mrs. Effie C., Key Route Inn, Oakland, Calif. 1923.
*§Colburn, Albert E., 716 S. Flower St., Los Angeles, Calif. 1905 (1915).
Cole, Mrs. Arthur H., Hotel Whitecotton, Berkeley, Calif. 1917.
Cole, F. R., Box 491, Orlando, Fla. 1922.
Cole, John L., R.D. 5, Nevada, Ia. 1922.
Comstock, Dr. John, Southwest Museum, Los Angeles, Calif. 1920.
*§Conover, H. B., 6 Scott St., Chicago, Ill. 1924.
Cook, Fred'k W., 1604 E. Harrison St., Seattle, Wash. 1919.
Cook, Miss Inez, Glendora, Calif. 1924.
Cooke, Miss May T., 2572 University Place, Washington, D. C. 1918.
Cookman, Alfred, 336 W. Pioneer Drive, Glendale, Calif. 1912.
Cooper, J. S., 310 Howard Ave., Piedmont, Calif. 1903.
Cope, Francis R., Jr., Dimock, Pa. 1919.
Copeland, Ada Belle, 1103 White Ave., Grand Junction, Colo. 1924.
Cordier, A. H., 415 Benton Boulevard, Kansas City, Mo. 1924.
Corwin, Ada Bell, Hot Springs, Tulare Co., Calif. 1925.
Cozens, Harold H., 1631 Posen Ave., Berkeley, Calif. 1921.
Craig, Agnes Somerville, 1221 Summit Ave., Pasadena, Calif. 1923.
Craven, Jesse T., 8935 Colfax St., Detroit, Mich. 1909.
Crockett, Harry L., R. 6, Box 34A, Phoenix, Ariz. 1924.
Crosby, Maunsell S., Grasmere Farms, Rhinebeck, N. Y. 1911.
Crow, Mrs. G. Maurice, Glendora, Calif. 1923.
Crum, Ethel, Box 92, Concord, Calif. 1920.
Culver, Geo. B., Stanford University, Calif. 1921.
Culver, Susan B., 2423 Prospect St., Berkeley, Calif. 1914.
Cummings, Byron, Univ. Ariz., Tucson, Ariz. 1916.
Cunningham, Walter, 3009 Dunham Ave., Kansas City, Mo. 1921.
Currier, Ed. S., 416 E. Chicago St., St. Johns Sta., Portland, Ore. 1904.
Danforth, Stuart Taylor, McGraw Hall, Ithaca, N. Y. 1925.
Davenport, Mrs. Elizabeth B., Northern Ave., Brattleboro, Vt. 1911.
Davenport, Mrs. W. S., 2730 Stuart St., Berkeley, Calif. 1922.
Davis, Dr. Frederick B., 421 Perkins St., Oakland, Calif. 1916.
Davis, Henry W., 10 S. Baton Rouge Ave., Atlantic City, N. J. 1922.
Davis, John M., 737 M St., Eureka, Calif. 1908.
Davis, Minot, 701 North E St., Tacoma, Wash. 1924.
Davy, Geo. L., Antler, North Dakota. 1925.
*Dawson, W. Leon, R.D. 3, Box 83, Santa Barbara, Calif. 1906 (1915).
Deane, Ruthven, 112 W. Adams St., Chicago, Ill. 1904.
Deane, Walter, 29 Brewster St., Cambridge, Mass. 1907.
Dearborn, Dr. Ned, Sackett Harbor, N. Y. 1909.
Decker, F. R., Kiona, Wash. 1913.
DeGroot, Dudley S., Peninsula Bldg. Material Co., Menlo Park, Calif. 1916.
deLaubenfels, Max Walker, 1499 E. Walnut St., Pasadena, Calif. 1921.
Delport, Mrs. Mary E., 1601 Oxford St., Berkeley, Calif. 1923.
Denny, Judge Thos. C., Sonoma, Calif. 1924.
Dewees, Miss Elizabeth, Whitehead Rd. and Marshall St., Norristown, Pa. 1922.
Dickens, Charles, Key Route Inn, Oakland, Calif. 1923.
Dickenson, A. B., R.D. 1, Box 11B, San Gabriel, Calif. 1916.
Dickenson, Mrs. A. B., R.D. 1, Box 11B, San Gabriel, Calif. 1919.
*§Dickey, Donald R., 514 Lester Ave., Pasadena, Calif. 1910.
Dickey, Mrs. Florence V. V., 514 Lester Ave., Pasadena, Calif. 1923.
Dille, F. M., Valentine, Neb. 1903.
Dings, G. M., 2161 Ry. Exch. Bldg., St. Louis, Mo. 1920.
Dixon, James Benjamin, Escondido, Calif. 1924.
Dixon, Joseph, Museum Vert. Zool., Berkeley, Calif. 1904.
Dobbs, R. J., Switzer's Camp, Box 179, Pasadena, Calif. 1924.
Dodge, Laura I., 3031 Eliot St., Long Beach, Calif. 1915.
Dodge, Ralph E., R.D. 9, Box 468, Exeter, Calif. 1915.
Doolittle, E. A., Box 44, Painesville, Ohio. 1918.

Drachman, Myra, 3031 Eliot St., Long Beach, Calif. 1915.
DuBois, Alexander Dawes, 327 S. Glenwood Ave., Springfield, Ill. 1911.
Duer, Craig R., 830 Washington Blvd., Grants Pass, Ore. 1924.
Dunkelberger, Harry Warren, Flourtown, Montgomery Co., Pa. 1924.
Duprey, H. F., R.D. 1, Box 1151, Sacramento, Calif. 1907.
Durfee, Owen, 727 Madison St., Fall River, Mass. 1911.
Dutton, P. C., 65 High St., Stone Staffs, England. 1913.
Dwight, Dr. Jonathan, Jr., 43 W. 70th St., New York, N. Y. 1904.
Dyke, Mrs. Estelle D., 405 E. Stocker St., Glendale, Calif. 1923.
Dyson, James Seabrook, The Army and Navy Club, Pall Mall, P. T. O., London, S. W. 1, England. 1924.
Easton, Mrs. Jane F., Torrey Road, La Jolla, Calif. 1920.
Eaton, S. Harrison, Box 653, Lawrenceville, Ill. 1916.
Edson, J. M., Marietta Road, Bellingham, Wash. 1911.
Edwards, Myrtle S., 2311 N. Allen Ave., Altadena, Calif. 1925.
*Eggleston, Prof. Julius W., 657 Lemon St., Riverside, Calif. 1913 (1919).
Ellis, Mrs. Ella Haines, 910 Grattan St., Los Angeles, Calif. 1922.
Ellis, Ralph, 2420 Ridge Road, Berkeley, Calif. 1923.
Ellis, Ralph, Jr., 2420 Ridge Road, Berkeley, Calif. 1923.
Elmore, Louis A., 2023 Delaware St., Berkeley, Calif. 1920.
*Emerson, W. Otto, Palm Cottage, Hayward, Calif. 1920 (1921).
English, Thomas A., 2001 Haste St., Berkeley, Calif. 1923.
Enochs, Rex P., 1155 Mullen Ave., Los Angeles, Calif. 1921.
Erichsen, W. J., 2311 Barnard St., Savannah, Ga. 1925.
Esterly, Dr. C. O., Occidental College, Los Angeles, Calif. 1908.
Evans, Ella A., Exeter, Calif. 1922.
Evans, Frank C., Crawfordsville, Ind. 1918.
Evans, J. Harold, R.D. 4, Box 500, Santa Rosa, Calif. 1917.
Evans, Wm. V., Livingston, Mont. 1920.
Everhart, Mrs. Helen P., 99 S. Meredith, Pasadena, Calif. 1925.
Evermann, Dr. Barton W., Cal. Acad. Sciences, San Francisco, Calif. 1911.
Fargo, Mrs. Minerva J., 1632 N. Kingsley Drive, Los Angeles, Calif. 1914.
Farley, Frank La Grange, Camrose, Alberta, Canada. 1923.
Faulconer, Thomas N., San Diego Zoological Gardens, Balboa Park, San Diego, Calif. 1925.
Felger, A. H., North Side High School, Denver, Colo. 1920.
*Ferguson, Mrs. Aurelia B., 999 Gramercy Drive, Los Angeles, Calif. 1922 (1922).
Ferguson, Mrs. Mary Van E., 1 Orchard Lane, Berkeley, Calif. 1915.
Ferriss, James H., West Park, Joliet, Ill. 1923.
Field, Clyde, 1859 Julian Ave., San Diego, Calif. 1919.
Finley, Wm. L., Jennings Lodge, Ore. 1900.
Fisher, Miss Edna M., 2410 Fulton St., Berkeley, Calif. 1923.
Fisher, Miss Elizabeth W., 2222 Spruce St., Philadelphia, Pa. 1910.
Fisher, Prof. Walter K., Stanford Marine Laboratory, Pacific Grove, Calif. 1900.
Fleming, J. H., 267 Rusholme Road, Toronto, Ont., Canada. 1910.
Fletcher, L. B., 54 Cotswald Road, Brookline, Mass. 1922.
Fletcher, Lyle R., 1202 Kentucky St., Lawrence, Kan. 1920.
Flinn, Catherine Mills, 1799 University Ave., Berkeley, Calif. 1920.
Floyd, Charles Benton, 454 Wolcott St., Auburndale, Mass. 1922.
Flynn, Helen, 1546 Shattuck Ave., Berkeley, Calif. 1920.
Forbush, E. H., State House, Boston, Mass. 1916.
Forrest, Earle R., 205 N. Main St., Washington, Pa. 1910.
Fortiner, John C., Box 496, Brawley, Calif. 1910.
Foster, Goodwin L., 1125 High Court, Berkeley, Calif. 1925.
Foster, Miss Rhoda, 721 Peralta Ave., Berkeley, Calif. 1924.
Fowler, Frederick H., 221 Kingsley Ave., Palo Alto, Calif. 1901.
Frank, Arthur W., Wash. Exp. Sta., Puyallup, Wash. 1920.
Frazer, J. Thomas, Jr., 432 W. Hawthorne St., Eureka, Calif. 1920.
Frederick, Mrs. Adeline, 1201 Henry St., Berkeley, Calif. 1922.
French, Mrs. A. J., Carlton, Ore. 1921.
French, James G., The Menagerie, 3628 Saanich Road, Victoria, B. C., Canada. 1918.
Frye, Prof. T. C., Univ. Wash., Seattle, Wash. 1919.
Fuertes, Louis A., 201 Wyckoff Ave., Ithaca, N. Y. 1904.
Gabrielson, Ira N., 515 P. O. Bldg., Portland, Ore. 1919.
Gallup, Frederick Norman, Escondido, Calif. 1921.
Gamble, Hamilton, 476 8th Ave., San Francisco, Calif. 1922.
Ganier, Albert F., 2507 Ashwood Ave., Nashville, Tenn. 1921.
Garber, Miss Lida J., 15 Tanglewood Road, Berkeley, Calif. 1923.
Gardner, Kenneth, 1941 Glenn Ave., Pasadena, Calif. 1925.
Gartrell, Geo. N., Summerland, B. C., Canada. 1917.
Gault, Benj. T., 564 N. Main St., Glen Ellyn, DuPage Co., Ill. 1905.
Gausebeck, A. T., 60 Broadway, New York City, N. Y. 1924.

Gay, Harold S., 200 S. Wilson Ave., Alhambra, Calif. 1901.
Geiselhart, Miss Josephine, Concord, Calif. 1920.
Gentry, Howard S., Westmoreland, Calif. 1925.
Giannini, Chas. A., Poland, N. Y. 1919.
Giddings, Levi A., 436 Douglas Ave., Salt Lake City, Utah. 1923.
Gifford, Dr. Harold, 3636 Burt St., Omaha, Neb. 1916.
Gignoux, Claude, 73 Tunnel Road, Berkeley, Calif. 1919.
Gilchrist, Francis G., Dept. of Zoology, Pomona College, Claremont, Calif. 1920.
Giles, Roscoe I., 82 Newton St., Marlborough, Mass. 1917.
Gilman, M. French, Banning, Calif. 1901.
Girvin, F. H., 5635 Melrose Ave., Los Angeles, Calif. 1919.
Goelitz, Herman, 944 Alameda Drive, Portland, Ore. 1920.
*Goelitz, Walter A., 170 Nunda Blvd., Rochester, N. Y. 1915 (1920).
Goldfrank, Arthur, 1107 S. Windsor Blvd., Los Angeles, Calif. 1925.
Goldman, E. A., Biol. Survey, Washington, D. C. 1901.
Goldman, Luther J., Biol. Survey, Boise, Idaho. 1902.
Goodcell, Mrs. Marion L., 864 D St., San Bernardino, Calif. 1914.
Grant, U. S., 4th, 639 S. Wilton Place, Los Angeles, Calif. 1909.
Gregory, Stephen S., Jr., 345 Barry Ave., Chicago, Ill. 1924.
Grey, Henry, R.D. 2, Box 154A, San Diego, Calif. 1901.
Griffee, Willet E., R.D. 3, Box 68, Corvallis, Ore. 1919.
Grimes, Samuel A., R.R. No. 6, Box 391, Jacksonville, Fla. 1924.
Grinnell, Dr. George Bird, 238 E. 15th St., New York, N. Y. 1914.
*Grinnell, Hilda Wood (Mrs. Joseph), 1644 San Lorenzo Ave., Berkeley, Calif. 1912 (1921).
*Grinnell, Prof. Joseph, Museum Vert. Zool., Berkeley, Calif. 1894 (1919).
Grinnell, Willard F., 1644 San Lorenzo Ave., Berkeley, Calif. 1921.
Gross, Prof. Alfred O., Bowdoin College, Brunswick, Maine. 1923.
Gunn, Miss Amy E., care Dr. H. Gunn, 350 Post St., San Francisco, Calif. 1914.
Gunthorp, Prof. Horace, Mills College, Calif. 1920.
Guthrie, Miss Esther, 2201 H St., Sacramento, Calif. 1918.
Hague, Florence S., Oreg. State Agr. Coll., Corvallis, Oreg. 1925.
Hall, Mrs. Carlotta C., 1615 La Loma Ave., Berkeley, Calif. 1915.
Hall, Mrs. C. H., 2141 N. Highland Ave., Los Angeles, Calif. 1921.
Hall, E. Raymond, Museum Vert. Zool., Berkeley, Calif. 1924.
Halladay, Daniel S., 628 E. Chestnut Ave., Santa Ana, Calif. 1910.
Halleck, Taylor H., Newport, Ore. 1923.
Hallinen, J. E., Cooperton, Kiowa Co., Okla. 1921.
Hampton, Mrs. Ethel C., 73 Leese St., San Francisco, Calif. 1914.
Hanaford, A. W., R.D. 9, Box 1210, Los Angeles, Calif. 1917.
Hands, Frank H., Dos Cabezos, Ariz. 1920.
Hann, H. H., Parkdale, Ore. 1909.
Hanna, Dr. G. Dallas, Cal. Acad. Sciences, San Francisco, Calif. 1921.
*Hanna, W. C., 141 East F St., Colton, Calif. 1902 (1921).
Harding, Mrs. Harriett Squier, Fellows, Calif. 1924.
Harding, Richard B., 107 W. Canton St., Boston, Mass. 1925.
Harlow, Richard C., Colgate Univ., Hamilton, N. Y. 1919.
Harper, Francis, Cornell Univ., Ithaca, N. Y. 1920.
*Harris, Harry, 18 W. 52d St., Kansas City, Mo. 1914 (1919).
Harrison, H. M., 319 Penn St., Camden, N. J. 1920.
Hart, Cecil, R.R. No. 1, Box 432, Montebello, Calif. 1920.
Hartman, Paul J., 1118½ Maple Ave., Los Angeles, Calif. 1917.
Hartung, Miss Esther, 124 Mill St., Grass Valley, Calif. 1923.
Harwell, Charles Albert, 2626 Haste St., Berkeley, Calif. 1925.
Haskett, Mrs. Bert, Box 95A, Route 2, Phoenix, Ariz. 1925.
Hathaway, Harry S., Norwood and Thorn Aves., South Auburn, R. I. 1912.
Havemeyer, Henry O., Mahwah, N. J. 1917.
Hayes, Mrs. F. M., Box 591, Davis, Calif. 1919.
Haywood, J. F., Mather, Tuolumne Co., Calif. 1923.
Head, Miss Anna, 2809 Forest Ave., Berkeley, Calif. 1912.
Heath, Prof. Harold, 1147 Ramona St., Palo Alto, Calif. 1919.
Hedges, Chas. F., Box 24, Miles City, Mont. 1919.
Heineman, Oluf J., 1664 Grove St., San Francisco, Calif. 1908.
Heller, Edmund, Field Museum Nat. Hist., Chicago, Ill. 1894.
Helme, Arthur H., Miller Place, Suffolk Co., N. Y. 1911.
Hendee, Russell W., 51 Poplar St., Brooklyn, N. Y. 1923.
Henderson, A. D., Belvedere, Alberta, Canada. 1923.
Henderson, H. N., 216 E. Philadelphia St., Whittier, Calif. 1923.
Henderson, Junius, 627 Pine St., Boulder, Colo. 1909.
Henderson, Walter C., 8 Magnolia Parkway, Chevy Chase, Md. 1918.
Hendren, Miss Elizabeth, Occidental, Calif. 1920.
Henshaw, Judge F. W., 762 Mills Bldg., San Francisco, Calif. 1915.
*Hersey, F. Seymour, 6 Maple Ave., Taunton, Mass. 1915 (1920).
Hill, Grace A., Camp Kearny Hospital, San Diego, Calif. 1922.
Hilton, Dr. W. A., Claremont, Calif. 1921.

Hoffman, Louis E., Box Cor. Benner and Shults St., Los Angeles, Calif. 1920.
Hoffmann, Ralph, Carpinteria, Calif. 1920.
Hohfeld, Mrs. Edward, 754 3d Ave., San Francisco, Calif. 1920.
Holden, Anna H. L., 2835 Divisadero St., San Francisco, Calif. 1924.
*Holland, Harold M., Box 515, Galesburg, *Ill. 1901 (1920)*.
Holliger, Charles Daniel, M.D., 215 Commercial Svgs. Bank Bldg., Stockton, Calif. 1925.
Holman, F. C., 1468 Greenwich St., San Francisco, Calif. 1914.
Homer, Mrs. W. H., Jr., 1625 S. Fifth St. East, Salt Lake City, Utah. 1924.
*Hoover, Prof. Theodore J., Box A, Stanford University, Calif. 1898 (1916).
Horsfall, R. Bruce, R. 6, Box 80, Portland, Ore. 1914.
Houghton, Clarence, 533 Washington Ave., Albany, N. Y. 1924.
Houghton, John D., 152 Suffolk Road, Chestnut Hill, Mass. 1922.
Howard, Hildegarde, 2943 So. Harvard Blvd., Los Angeles, Calif. 1924.
Howard, O. W., 9th and Olive Sts., Los Angeles, Calif. 1895.
Howatt, Dr. G. A., Humboldt Nat. Bank Bldg., Eureka, Calif. 1925.
Howatt, Haven D., 1922 F St., Eureka, Calif. 1924.
*§Howell, Alfred Brazier, Room 61, U. S. Nat. Mus., Washington, D. C. 1908 (1915).
Howell, Arthur H., 2919 S. Dakota Ave., Washington, D. C. 1916.
Howell, B. F., Jr., 52 Patton Ave., Princeton, N. J. 1909.
Howes, Paul G., 46 Auldwood Road, Stamford, Conn. 1910.
Huber, Wharton, Academy of Natural Sciences, 19th and Race Sts., Philadelphia, Pa. 1915.
Hudson, L. W., 5407 Genoa St., Oakland, Calif. 1917.
*Huey, Laurence, Natural History Museum, Balboa Park, San Diego, Calif. 1909 (1921).
Humphrey, Mary Brown, Univ. of Iowa Library, Iowa City, Iowa. 1924.
Hungate, J. W., State Normal School, Cheney, Wash. 1924.
Hunt, Chreswell J., 1929 S. Gunderson Ave., Berwyn, Ill. 1919.
Hunt, Richard, Museum Vert. Zool., Univ. of Calif., Berkeley, Calif. 1918.
Hunter, J. S., Box 482, San Mateo, Calif. 1903.
Hurley, John B., Box 143, Tacoma, Wash. 1921.
Husher, Mrs. Gertrude H., 821 S. Hope St., Los Angeles, Calif. 1913.
Hyde, Mrs. Silkman E., Regena, Idaho. 1922.
Illingsworth, J. F., Univ. Hawaii, Honolulu, T. H. 1896.
Ingersoll, Albert M., 908 F St., San Diego, Calif. 1895.
Isham, C. Bradley, 909 Valley Road, Upper Montclair, N. J. 1909.
Jackson, Dr. Hartley H. T., *Biol. Survey*, Washington, D. C. 1921.
Jackson, Ralph W., R.D. 1, Cambridge, Md. 1917.
Jacobs, J. Warren, 404 S. Washington St., *Waynesburg, Pa. 1909.*
Jacobsen, W. C., 2319 M St., Sacramento, Calif. 1916.
Jacot, Edward C., Box 462, Prescott, Ariz. *1923.*
Jaeger, Edmund C., 1462 W. 6th St., Riverside, Calif. 1922.
Jay, Antonin, 1622 Pennsylvania Ave., Los Angeles, Calif. 1901.
Jay, William, 12 Westview Ave., Mt. Airy, Philadelphia, Pa. 1925.
Jesurun, Dr. Mortimer, 802 American Ave., Long Beach, Calif. 1916.
Jesser, Harvey Hogan, 4232 Montgomery St., Oakland, Calif. 1925.
Jewett, Stanley G., 582 Bidwell Ave., Portland, Ore. 1909.
Johnson, A. C., Whittier Nat. Bank, Whittier, Calif. 1919.
Johnson, Miss Clare E., Room 151, City Hall, San Francisco, Calif. 1921.
Johnson, H. H., Pittsfield, Me. 1920.
Johnson, Henry W., 284 East Orange Grove Ave., Pasadena, Calif. 1924.
Johnson, Dr. Myrtle E., National City, Calif. 1908.
Jones, Egbert R., Box 338A, Ceres, Calif. 1925.
Jones, Dr. Lynds, Museum Oberlin Coll., Oberlin, Ohio. 1911.
Jordan, A. H. B., Everett, Wash. 1911.
Jordan, Dr. David Starr, Stanford University, Calif. 1902.
Judson, W. B., 826 Washington Bldg., Los Angeles, Calif. 1894.
Kaeding, Geo. L., 227 N. Central Ave., Glendale, Calif. 1903.
Kalmbach, Edwin R., Biological Survey, Washington, D. C. 1923.
Keck, David Daniel, Smiley Hall, Claremont, Calif. 1924.
Keefer, Miss Mary Bell, 1405 Montana St., El Paso, Texas. 1923.
Keeler, Mrs. Lauretta B., Box 471, King City, Calif. 1925.
Kell, Delacourt, Claremont, Calif. 1921.
Kellogg, Miss Louise, Box 248, Suisun, Calif. 1911.
Kellogg, Miss Mildred, 2232 Piedmont Ave., Berkeley, Calif. 1921.
Kellogg, Ralph T., Silver City, N. M. 1916.
Kellogg, Dr. Vernon L., National Research Council, B and 21st St., Washington, D. C. 1901.
Kelly, Junea W. (Mrs. G. E.), 1311 Grand St., Alameda, Calif. 1918.
Kelso, Dr. John Edward Harry, Edgewood, Arrow Lakes, B. C., Canada. 1925.
*Kennard, Frederick H., Dudley Road, Newton Centre, Mass. 1911 (1916).
Kennedy, Clarence H., Zool. Dept., Ohio State Univ., Columbus, Ohio. 1912.
Kennedy, Miss Eveline, 5330 Pasadena Ave., Los Angeles, Calif. 1921.
Kennedy, H. M., 103 East Grand Blvd., Detroit, Mich. 1925.

Keyes, Prof. Chas. R., Mt. Vernon, Iowa. *1900.*
Kibbe, A. S., 1534 Grove St., Berkeley, Calif. 1917.
Kibbe, Bessie W. (Mrs. A. S.), 1534 Grove St., Berkeley, Calif. 1917.
Kimball, F. E. A., Tucson, Ariz. 1924.
*Kimball, H. H., Paradise, Ariz. 1909.*
King, Albert H., 3612 N. Griffin Ave., Los Angeles, Calif. 1920.
King, Benjamin H., 1215 Lakeshore Drive, Coeur d'Alene, Idaho. 1921.
Kirn, Albert J. B., Box 157, Somerset, Texas. *1918.*
Kittridge, Joseph, Jr., care of Lake States Forest Exper. Sta., University Farm, St. Paul, Minn. 1915.
Kloss, Philip, 24 Greenbank Ave., Piedmont, Calif. 1922.
Kluegel, Mrs. Edward A., Carmel, Calif. 1916.
Knapp, Elmer, Route No. 2, Troy, Pa. 1924.
Knickerbocker, Chas. K., 445 N. Sacramento Ave., Carpenter Sta., Chicago, Ill. 1905.
Knowlton, Dr. F. H., U. S. Nat. Museum, Washington, D. C. 1910.
Kofoid, Prof. C. A., Zool. Dept., Univ. Calif., Berkeley, Calif. 1909.
Kohler, Louis S., R.D. 2, Paterson, N. J. 1909.
Kretzman, Prof. P. E., 3705 Texas Ave., St. Louis, Mo. 1914.
Kuser, John Dryden, Bernardsville, N. J. 1912.
Labarthe, Jules, 2727 Russell St., Berkeley, Calif. 1914.
Laing, Mary E., Carmel-by-the-Sea, Calif. 1925.
La Jeunesse, H. V., 2517 Webb St., Alameda, Calif. 1916.
Lamb, Chester C., 235 W. 27th St., Los Angeles, Calif. 1899.
Lancashire, Sarah (Mrs. J. Henry), Grafton Wood, Manchester, Mass. 1911.
Lane, Geo. W., Morgan Hill, Calif. 1914.
Langevin, Elmer, 325 South Broadway, Crookston, Minn. 1922.
Lano, Albert, 120 N. Block St., Fayetteville, Ark. 1920.
Langstroth, James H., P. O. Box D, Silver City, New Mexico. 1922.
Lastreto, C. B., 260 California St., San Francisco, Calif. 1913.
*§Law, J. Eugene, Altadena, Calif. 1900 (1915).
*§Law, Laura Beatty (Mrs. J. E.), Altadena, Calif. 1915 (1919).
Layne, J. Gregg, 619 Central Building, Los Angeles, Calif. 1912.
Lazier, Prof. Edgar Locke, Reed College, Portland, Ore. 1924.
Leach, Frank A., 217 Hillside Ave., Piedmont, Calif. 1917.
Lee, Mrs. Melicent H., El Cajon, Calif. 1920.
Lee, Ren M., 231 N. C St., Tulare, Calif. 1922.
Leffingwell, Dana J., *Laboratory of Ornithology, Cornell University, Ithaca, N. Y.* 1925.
Leggett, Dr. R. M., 2140 9th Ave., San Francisco, Calif. 1918.
Lelande, H. J., 200 Currier Bldg., Los Angeles, Calif. 1897.
*Leopold, Aldo, care of Forest Products Lab., Madison, Wis. 1916.*
Libby, Gretchen L., LaVina Sanitarium, Pasadena, Calif. *1911.*
*Lien, Carl, Clallam Bay, Wash. 1917.*
*Ligon, J. Stokley, 1705 E. Silver Ave., Albuquerque, New Mexico. 1914.*
Liliencrantz, H. T., Rancho Las Cimas, Hollister, Calif. 1916.
Limbert, R. W., Box 1284, Boise, Idaho. 1921.
Lincoln, Frederick C., U. S. Biological Survey, Washington, D. C. 1922.
Lindemann, Miss W. C., 1435 8th St., Alameda, Calif. 1922.
Lindsay, Dr. D. Moore, 808 Boston Bldg., Salt Lake City, Utah. 1915.
§Little, Luther, 1403 Garfield Ave., S. Pasadena, Calif. 1914.
Littlejohn, Chase, 1226 Warren St., Redwood City, Calif. 1901.
Livesey, Alice Rose, 373 W. California St., Glendale, Calif. 1921.
Lloyd, Hoyes, 405 Queen St., Ottawa, Canada. 1923.
Lombardi, Mrs. M. E., 2249 Piedmont Ave., Berkeley, Calif. 1916.
Lord, James S., St. Stephen, New Brunswick. 1925.
Loring, J. Alden, Owego, Tioga Co., N. Y. 1914.
§Love, Guy, Santee, Calif. 1913.
Low, Mrs. Marion Ware, 1415 Crescent Ave., Hollywood, Calif. 1922.
Lucas, Lex R., Claremont, Calif. 1925.
Lueders, Fred H. W., 516 E. Main St., Compton, Calif. 1923.
Lunt, James C., 109 Liberty St., San Francisco, Calif. 1922.
Lusk, Richard D., R. 2, Box 722, San Gabriel, Calif. 1915.
Luther, Clarence H., 8 McIlroy Bldg., Fayetteville, Ark. 1909.
MacKaye, David L., Tulare, Calif. 1922.
McAtee, W. L., Biol. Survey, Washington, D. C. 1907.
McBride, Everett F., 714 S. New Hampshire St., Los Angeles, Calif. 1923.
McCoy, Frank J., Santa Maria Inn, Santa Maria, Calif. 1923.
McDaniel, George H., 234 W. Pratt St., Eureka, Calif. 1923.
McGettigan, Carroll, 2644 Filbert St., San Francisco, Calif. 1921.
*McGregor, R. C., Bureau of Science, Manila, P. I. 1893 (1916).
McGugin, Winifred, 2525 Hearst Ave., Berkeley, Calif. 1925.
McKeough, Dr. Geo. T., Erie Manor, R.D. 1, Blenkerin, Ontario, Canada. 1922.
McKibben, J. W., 2522 Piedmont Ave., Berkeley, Calif. 1921.

McLain, R. B., Box 132, Hollywood, Calif. 1897.
McLean, Donald D., Coulterville, Calif. 1916.
McLean, Robert R., 2904 Granada St., San Diego, Calif. 1922.
McLellan, Miss Mary E., Calif. Academy of Sciences, San Francisco, Calif. 1919.
McNeil, Ethel C. E., Pomona College, Claremont, Calif. 1924.
Mailliard, Ernest C., Federal Reserve Bank, San Francisco, Calif. 1909.
Mailliard, John W., 230 California St., San Francisco, Calif. 1894.
Mannington, Joseph A., 1342 Detroit St., Los Angeles, Calif. 1923.
Marburger, Clifford, Denver, Lancaster Co., Pa. 1925.
Marshall, Dr. Benj. M., 2036 D St., Eureka, Calif. 1913.
Martin, Mrs. Bertha Davis, 1639 Golden Gate Ave., Los Angeles, Calif. 1920.
Martz, Mrs. Warren H., 4601 Welch Pl., Los Angeles, Calif. 1924.
Massey, Herbert, Ivy Lea, Burnage, Didsbury, Manchester, England. 1909.
Mead, Mrs. Edwin B., 2618 Etna St., Berkeley, Calif. 1920.
Meade, Mrs. Calvert, Box 161, Carmel, Calif. 1916.
Meadows, Donald C., 231 N. Grand St., Orange, Calif. 1919.
Meeker, Jesse C. A., Box 161, Danbury, Conn. 1907.
Meister, H. D., Yoakum, Texas. 1909.
*§Mershon, W. B., Saginaw, Mich. 1911 (1919).
Mestre, Harold, Fresno State College, Fresno, Calif. 1925.
Mexia, Mrs. Ynes, 401 Medical Bldg., San Francisco, Calif. 1921.
Michael, Chas. W., Yosemite, Calif. 1916.
Michener, Harold, 418 Elm Ave., Pasadena, Calif. 1924.
Middleton, R. J., Jeffersonville, Pa. 1918.
Mikesell, Mrs. H. B., 1633 Addison St., Berkeley, Calif. 1924.
Miller, Alden Holmes, 6066 Hayes Ave., Los Angeles, Calif. 1923.
Miller, Mrs. Delphia S., 1523 Tonawanda Ave., Los Angeles, Calif. 1921.
Miller, Frederic W., 935 S. Gaylord St., Denver, Colo. 1922.
Miller, Dr. Loye Holmes, S. Branch, Univ. Calif., Los Angeles, Calif. 1905.
Miller, Mary Mann, 5928 Hayes Ave., Los Angeles, Calif. 1920.
Miller, Dr. R. C., Univ. of Wash., Seattle, Wash. 1921.
Miller, W. De Witt, Amer. Museum Nat. Hist., New York, N. Y. 1909.
§Mitchell, H. H., Prov. Museum, Normal School, Regina, Sask., Canada. 1915.
Mitchell, Mrs. Irving J., 1127 W. 20th St., Los Angeles, Calif. 1924.
Mitchell, Dr. Walton I., Paonia, Delta Co., Colo. 1909.
Mix, Mrs. Arthur J., 1915 W. 8th St., Los Angeles, Calif. 1922.
Moffitt, James, 1825 Broadway, San Francisco, Calif. 1917.
Monk, Harry C., Avoca Apts., Nashville, Tenn. 1925.
Moore, Miss Nellie, 122 Falcon Ave., Long Beach, Calif. 1915.
Moore, Robert T., 505 Slavin Bldg., Pasadena, Calif. 1911.
Moran, R. B., 1318 S. Gramercy Place, Los Angeles, Calif. 1897.
More, R. L., Vernon, Texas. 1911.
Morley, Prof. S. Griswold, 2635 Etna St., Berkeley, Calif. 1916.
Morse, Geo. W., 318 E. 9th St., Tulsa, Okla. 1922.
Mullen, James L., 1264 Logan Ave., Salt Lake City, Utah. 1915.
Munro, J. A., Okanagan Landing, B. C., Canada. 1914.
Murie, Olaus J., 219 7th Ave. S., Moorehead, Minn. 1913.
Musgrave, Ethel Weatherford (Mrs. M. F.), Box 765, Phoenix, Ariz. 1921.
Myers, Mrs. H. W., 311 N. Ave. 66, Los Angeles, Calif. 1912.
Myers, Mabel Adelaide, 617 W. Center St., Anaheim, Calif. 1922.
*Nace, C. A., 171 W. Santa Clara St., San Jose, Calif. 1920 (1920).
Nash, Herman W., Box 264, Pueblo, Colo. 1922.
Naumburg, Mrs. Walter W., Hotel St. Regis, 5th Ave. and 55th St., New York City, N. Y. 1922.
Neff, Johnson A., Dept. Horticulture, O. A. C., Corvallis, Ore. 1920.
Neilson, Mrs. Katherine, 1419 Versailles St., Alameda, Calif. 1920.
Neilson, James Alexander, Wheatland High School, Wheatland, Wyo. 1924.
Nelson, Roy A., Livermore, Calif. 1925.
Newhall, Mrs. Chas. S., 2629 Piedmont Ave., Berkeley, Calif. 1916.
Nice, Mrs. Margaret Morse, Amherst, Mass. 1921.
Nichols, J. T., Amer. Museum Nat. Hist., New York, N. Y. 1909.
Nicholson, Donald J., Orlando, Fla. 1911.
Nicholson, Gordon, W. 7th St., Ontario, Calif. 1919.
Niedrach, Robert J., 808 S. Gilfin St., Denver, Colo. 1922.
Nienburg, Miss Matilda V., 2031 Alameda Ave., Alameda, Calif. 1922.
Noack, H. R., 309 Perry St., Oakland, Calif. 1901.
Nokes, Dr. I. D., 1120 Marsh-Strong Bldg., Los Angeles, Calif. 1914.
Norris, Joseph Parker, Jr., 2122 Pine St., Philadelphia, Pa. 1911.
Norris, Roy, 725 N. 10th St., Richmond, Ind. 1911.
Norton, Arthur H., 22 Elm St., Portland, Me. 1918.
Oberholser, Dr. Harry C., 2805 18th St., N. W., Washington, D. C. 1904.
O'Farrell, Mrs. Mabel E., 2403 F St., San Diego, Calif. 1917.
Ogden, Dr. H. V., 141 Wisconsin St., Milwaukee, Wis. 1924.

Ohl, H. C., McKittrick, Calif. 1913.
Ohlendorf, W. C., 524 E. Stewart Ave., Park Ridge, Ill. 1910.
Olson, Miss Eva M., 630 Ventura St., Pasadena, Calif. 1925.
Ortega, James L., Yountville, Napa Co., Calif. 1924.
Orton, L. R., Fillmore, Calif. 1924.
Osborne, Ernest Glenn, 161 W. 6th St., Claremont, Calif. 1924.
Osgood, Dr. Wilfred H., Field Museum Nat. Hist., Chicago, Ill. 1893.
Osincup, Clayton A., 30 W. Montana St., Pasadena, Calif. 1922.
Owen, Virgil W., 832 Beacon St., Los Angeles, Calif. 1896.
Pack, Arthur Newton, 11 Morven St., Princeton, N. J. 1925.
Page, Paul E., 401 N. Yakima Ave., Tacoma, Wash. 1925.
Palmer, Miss Elizabeth Day, 1741 Harvard Blvd., Los Angeles, Calif. 1909.
Palmer, R. H., 207 Hawthorne St., Palo Alto, Calif. 1915.
*§Palmer, Dr. T. S., 1939 Biltmore St., N. W., Washington, D. C. 1903 (1920).
Pangburn, Clifford H., 299 Madison Ave., New York City, N. Y. 1920.
Parcell, Miss Zulema L., 1633 Orange St., Los Angeles, Calif. 1919.
Parker, Herbert, South Lancaster, Mass. 1911.
Parmenter, Henry E., 317 E. Valeria St., Santa Barbara, Calif. 1916.
Paroni, Clelia A., 2904 Regent St., Berkeley, Calif. 1921.
Patterson, J. E., Box 478, Ashland, Ore. 1922.
Paul, Prof. J. H., 1320 E. 2d St. S., Salt Lake City, Utah. 1915.
Paul, Lucius H., 436 Carter St., Rochester, N. Y. 1911.
Paulson, Martin C., R.D. 5, Nevada, Iowa. 1922.
Peabody, Lloyd, 300 Globe Bldg., St. Paul, Minn. 1924.
Peabody, Rev. P. B., 420 Blvd. N, Apt. 4, Atlanta, Ga. 1904.
Pearson, T. Gilbert, 1974 Broadway, New York, N. Y. 1910.
Peck, Prof. Morton E., 244 N. 12th St., Salem, Ore. 1909.
Pellew, Miss Marion J., Box 455, Aiken, S. C. 1923.
Pember, Karl A., Woodstock, Vermont. 1922.
Pemberton, J. R., 1933 N. Vista del Mar, Hollywood, Calif. 1900.
Penney, Chas. G., Ojai, Ventura Co., Calif. 1923.
Pennock, Chas. J., Kennett Square, Philadelphia, Pa. 1909.
Perine, Keble Barnum, 2218 Bancroft Way, Berkeley, Calif. 1925.
Perry, Mrs. Elinor B., 254 Main St., Hayward, Calif. 1924.
Perry, Henry Joseph, 19 Bay State Road, Boston, Mass. 1925.
Peterson, Hans C., P. O. Box 396, Reedley, Calif. 1924.
*Peyton, Laurence, R.D. 2, Fillmore, Calif. 1909 (1922).
*Peyton, Sidney B., Sespe, Calif. 1913 (1922).
Phelps, Frank M., 212 E. 4th St., Elyria, Ohio. 1912.
*§Philipp, Philip Bernard, 220 Broadway, New York, N. Y. 1911 (1920).
§Phillips, Dr. John C., Knobfields, Wenham, Mass. 1911.
*§Pierce, Wright M., Box 343, Claremont, Calif. 1902 (1919).
Pierpont, Philip, Nordhoff, Calif. 1913.
Pilsbury, Frank O., 1088 Main St., Walpole, Mass. 1911.
Pitcher, Mrs. E. C., R.D. 1, Box 273, Hayward, Calif. 1920.
Poole, Cecil A., P. O. Box 262, Monmouth, Ore. 1924.
Pope, E. F., Box 113, El Reno, Okla. 1913.
Post, Wm. Stone, Bernardsville, N. J. 1925.
Potter, Miss Jessica A., 1118 Santee St., Los Angeles, Calif. 1922.
Powell, Miss Helen, Berkeley Inn, Telegraph and Haste Sts., Berkeley, Calif. 1914.
Pratt, Helen S., 2451 Ridge View Ave., Eagle Rock, Calif. 1920.
Price, A. E., Grant Park, Ill. 1905.
Prill, Dr. A. G., Scio, Ore. 1921.
*Pringle, Miss Cornelia C., 1816 Vallejo St., San Francisco, Calif. 1915 (1922).
Procter, James Norris, Box 188, Santa Paula, Calif. 1922.
Purdy, William B., Milford, Mich. 1921.
Quayle, Ernest Harrison, Box 4, Stanford University, Calif. 1924.
Quillin, Roy W., 1025 Summit Ave., San Antonio, Texas. 1921.
Raker, Mary E., Carlsbad, New Mexico. 1919.
Rand, Frank L., 1106 Arcade Bldg., St. Louis, Mo. 1922.
Randolph, Miss Flora A., 2962 Derby St., Berkeley, Calif. 1907.
Rankin, Edward P., 1814 Marin Ave., Berkeley, Calif. 1913.
Ransom, Webster H., 708 W. 20th Ave., Spokane, Wash. 1921.
Rathbun, S. F., 217 14th Ave. N., Seattle, Wash. 1904.
Rawson, Charles I., Oxford, Mass. 1918.
Ray, Milton S., 118 New Montgomery St., San Francisco, Calif. 1899.
Reemer, D. Herbert, 860 N. Michigan Ave., Pasadena, Calif. 1925.
Reid, Russell, 210 Thayer St., Bismark, N. Dakota. 1921.
Reis, C. Oscar, 647 Juanita Ave., Los Angeles, Calif. 1917.
Rett, Egmont J., Santa Barbara Mus. Comparative Oology, Mission Canyon, Santa Barbara, Calif. 1922.
Rich, Dr. Guy C., 1820 El Cerrito Place, Hollywood, Calif. 1911.
Rich, Selwyn, Box 55, Claremont, Calif. 1919.
Rich, Waldo L., Saratoga Springs, N. Y. 1919.

Richards, E. B., 128 Chester St., Grass Valley, Calif. 1909.
Richards, Dr. T. W., U. S. N., 1724 P St., N. W., Washington, D. C. 1908.
Richards, W. W., Room 708, 717 Market St., San Francisco, Calif. 1915.
Richardson, W. D., 4215 Prairie Ave., Chicago, Ill. 1918.
§Richmond, Dr. Chas. W., U. S. Nat. Museum, Washington, D. C. 1904.
Richmond, Frank, care Richmond Bros., El Centro, Calif. 1920.
Riley, J. H., U. S. Nat. Museum, Washington, D. C. 1909.
Rittenhouse, Samuel, 5752 Chesley Ave., Los Angeles, Calif. 1916.
Ritter, Prof. W. E., Hotel Whitecotton, Berkeley, Calif. 1901.
Robb, Wallace Havelock, 371 Aqueduct St., Montreal, Quebec. 1925.
Roberts, Dr. T. S., Zoological Museum, Univ. Minn., Minneapolis, Minn. 1909.
Robertson, Howard, 157 Wilton Drive, Los Angeles, Calif. 1896.
§Robertson, John McB., R.D. 1, Box 13, Buena Park, Orange Co., Calif. 1913.
Robertson, Mrs. John McB., Buena Park, Calif. 1920.
Roe, Mrs. E. D., Pelton Water Wheel Co., 19th and Harrison Sts., San Francisco, Calif. 1919.
Rogers, Dr. Wallace, 65 Hurt St., Atlanta, Ga. 1925.
Ross, Roland C., 388 Dearborn St., Pasadena, Calif. 1920.
Rowan, Wm., Dept. Zool., Univ. Alberta, Edmonton, Alta., Canada. 1921.
Rowley, J., 403 S. 1st St., Alhambra, Calif. 1909.
Rush, Miss Lora Gertrude, 1607 Walnut St., Berkeley, Calif. 1920.
Russell, Carl P., P. O. Box 153, Yosemite, Calif. 1923.
Rust, Henry J., Box 683, Coeur d'Alene, Idaho. 1911.
Sage, Jno. H., Portland, Conn. 1910.
Sampson, W. B., 1005 N. San Joaquin St., Stockton, Calif. 1894.
Sanborn, Colin Campbell, Field Museum Nat. Hist., Chicago, Ill. 1924.
Sanderson, Miss Dorothy, 937 Orange Grove Ave., Hollywood, Calif. 1922.
Sanford, Dr. Leonard C., 347 Temple St., New Haven, Conn. 1915.
Sanford, W. H., 919 W. Acacia St., Stockton, Calif. 1915.
Saunders, Aretas A., 48 Longview Ave., Fairfield, Conn. 1909.
Saunders, Mrs. E. J., 122 N. Friends Ave., Whittier, Calif. 1925.
Saunders, Mrs. Kenneth, Creston Road, High Acres, Berkeley, Calif. 1920.
Saunders, W. E., London, Ont., Canada. 1910.
Sawyer, Edmund Joseph, Yellowstone Park, Wyoming. 1925.
Schafer, Oscar F., 669 Genesee St., Rochester, N. Y. 1917.
Schenck, W. Egbert, 17 Panoramic Way, Berkeley, Calif. 1924.
Schenck, Sara M. (Mrs. W. Egbert), 17 Panoramic Way, Berkeley, Calif. 1924.
Schlesinger, Mrs. Jane L., 1417 Filbert St., Oakland, Calif. 1915.
Schneider, Fred A., care Warren Dried Fruit Co., San Jose, Calif. 1901.
Schneider, Mrs. G. H., 4618 Kingswell Ave., Los Angeles, Calif. 1921.
§Schneider, J. J., Box 363, Anaheim, Calif. 1899.
Schussler, Geo. W., 1345 Oak St., San Francisco, Calif. 1911.
Sclater, William Lutley, 10 Sloane Court, London, S. W., England. 1909.
Scott, Carroll DeWilton, 1604 7th St., San Diego, Calif. 1915.
Sefton, J. W., Jr., 650 F St., San Diego, Calif. 1923.
Seymour, Mrs. Geo. H., 101 N. Kennilworth Ave., Oak Park, Ill. 1922.
Sharp, Clarence S., Escondido, Calif. 1902.
Sharples, Mrs. J. M., Juneau, Alaska. 1924.
Sharples, Robert P., West Chester, Pa. 1911.
Shaw, Prof. W. T., Box 66, College Sta., Pullman, Wash. 1911.
Sheldon, Harry H., Santa Barbara Mus. of Nat. Hist., Santa Barbara, Calif. 1922.
Shelton, Alfred C., Johnston-Shelton Co., Dayton, Ohio. 1909.
Shepard, John Alden, Route A, Morgan Hill, Calif. 1919.
Shepherd, A. R., 457 W. Burchett St., Glendale, Calif. 1920.
Shepherd, Mrs. Hattie E., R. R. 1, Box 73, Redlands, Calif. 1921.
*§Sherman, Althea R., National, via McGregor, Iowa. 1911 (1916).
Sherwood, Jack, Box 264, Salinas, Calif. 1923.
Sherwood, Wm. E., 787 Cross St., Salem, Ore. 1923.
Shiras, George, 3d, Stoneleigh Court, Washington, D. C. 1914.
Silliman, Edmund, Alisal and Ryker Sts., Salinas, Calif. 1918.
Silliman, O. P., 220 Salinas St., Salinas, Calif. 1893.
Simonds, Dr. Paul E., 304 Loring Bldg., Riverside, Calif. 1922.
Simpson, Roger G., 201 Tunnel Road, Berkeley, Calif. 1924.
Sinsel, Joseph A., 612 Pleasant Ave., Yakima, Wash. 1924.
Sismey, Eric Deane, Power House No. 3, Big Creek, Fresno Co., Calif. 1925.
*Skinner, M. P., N. Y. State College of Forestry, Syracuse, N. Y. 1915.
Sloanaker, Jos. L., 907 W. Mansfield Ave., Spokane, Wash. 1910.
Smith, Allyn G., 1825 Hopkins St., Berkeley, Calif. 1909.
Smith, Austin Paul, Apartado 412, San Jose, Costa Rica. 1907.
Smith, A. Russell, Mt. Carmel Ave., North Glenside, Pa. 1919.
Smith, Chas. Piper, 354 So. 10th St., San Jose, Calif. 1923.

Smith, C. R., 563 42d Ave., San Francisco, Calif. 1917.
Smith, Miss Emily, Route 1, Box 56, Los Gatos, Calif. 1924.
Smith, Prof. Frank, 1005 W. California Ave., Urbana, Ill. 1911.
Smith, Franklin J., Box 98, Eureka, Calif. 1913.
Smith, Horace G., 2918 Lafayette St., Denver, Colo. 1914.
Smith, Napier, Bank of Montreal, Verdun, Quebec, Canada. 1919.
Snow, Mrs. Oscar, Messilla Park, New Mexico. 1924.
Snyder, Prof. J. O., Box 775, Stanford University, Calif. 1900.
Snyder, L. L., Royal Ontario Museum Zool., Toronto, Ont., Canada. 1924.
Spaulding, Prof. M. Herrick, Agr. Coll., Bozeman, Mont. 1918.
Spaulding, Manfred Kenwood, Box 984, Westwood, Calif. 1924.
Sprot, George Doveton, Cobble Hill, Vancouver Island, B. C. 1925.
Stacey, John William, 645 Leavenworth St., San Francisco, Calif. 1921.
Stafford, John LeMoyne, Box 128, Gresham, Ore. 1924.
Stahl, Charlotte, 955 So. Alvarado St., Los Angeles, Calif. 1924.
Stanford, Miss Mabel A., Box 124, Claremont, Calif. 1921.
Staub, Henry A., care of Varney Bros., El Centro, Calif. 1924.
Steinbeck, Wm. P., 611 Bristol Ave., Stockton, Calif. 1897.
Stephens, T. C., Morningside College, Sioux City, Iowa. 1914.
Stephenson, Miss Omie, Monte Vista, Colo. 1922.
Stivers, Dr. C. G., 1115 Arapahoe St., Los Angeles, Calif. 1914.
Stock, Mrs. Chester, 2841 Forest Ave., Berkeley, Calif. 1924.
Stoddard, H. L., Beachton, Grady Co., Ga. 1914.
Stone, D. D., R.D. 3, Oswego, N. Y. 1909.
Stone, Geo. E., Box 371, Carmel, Calif. 1912.
Stone, Harry Herbert, Jr., P. O. Box 101, Sturbridge, Mass. 1925.
Stone, Dr. Witmer, Academy Nat. Sciences, Logan Circle, Philadelphia, Pa. 1924.
Stoner, Emerson A., Box 444, Benicia, Calif. 1918.
Storer, Miss Mary S., 467 San Pablo Ave., Fresno, Calif. 1914.
Storer, Prof. Tracy I., University Farm, Davis, Calif. 1910.
Stormont, W. P., 214 No. Ave. 53, Los Angeles, Calif. 1917.
Stow, Harry P., 1617 Central Ave., Alameda, Calif. 1921.
Streator, Clark P., 16 Mason St., Santa Cruz, Calif. 1919.
*§Strong, W. A., 41 Grand Ave., San Jose, Calif. 1912 (1920).
Strong, Wm. Duncan, 2220 Piedmont Ave., Berkeley, Calif. 1921.
Stuart, Geo. H., 3d, 923 Clinton St., Philadelphia, Pa. 1913.
Stuart, Morton, U. S. Forest Service, Santa Barbara, Calif. 1924.
Sugden, J. W., 47 S. 8th W. St., Salt Lake City, Utah. 1915.
Sumner, E. L., Jr., 1375 So. Palomares St., Pomona, Calif. 1924.
Sutton, George Miksch, State Game Commission, Harrisburg, Pa. 1924.
Swales, B. H., U. S. Nat. Museum, Washington, D. C. 1898.
§Swarth, Harry S., Museum Vert. Zool., Berkeley, Calif. 1897.
Sweeney, Joseph A., U. S. Forest Service, Nenzel, Neb. 1912.
Swenk, Prof. Myron Harmon, 1410 N. 37th St., Lincoln, Neb. 1916.
Sykes, Mildred E., 3915 S. Vermont Ave., Los Angeles, Calif. 1924.
Tanner, V. M., 465 Hamilton Ave., Palo Alto, Calif. 1919.
Tate, Ralph C., Kenton, Okla. 1924.
Taverner, P. A., Zool. Div., Geol. Survey, Ottawa, Ont., Canada. 1909.
Taylor, E. F., Grass Valley, Nevada Co., Calif. 1910.
Taylor, Mrs. H. J., 2813 Channing Way, Berkeley, Calif. 1920.
Taylor, Jesse H., Box 125, Eagle Rock, Calif. 1919.
Taylor, L. E., R.D. 2, Reno, Nev. 1897.
Taylor, Lionel V., Kelowna, B. C., Canada. 1921.
Taylor, Dr. Walter P., 1746 E. Fifth St., Tucson, Ariz. 1905.
Teachenor, Dix, 437 W. 60th St. Terrace, Kansas City, Mo. 1922.
Tenney, Vernon L., 2536 Etna St., Berkeley, Calif. 1922.
Terrill, L. McI., 44 Stanley Ave., St. Lambert, Que., Canada. 1911.
Test, Dr. Louis A., 222 North St., W. Lafayette, Ind. 1908.
*§Thayer, John E., Box 98, Lancaster, Mass. 1906 (1914).
Thomas, Geo. C., 3d, 1014 Crescent Drive, Beverly Hills, Calif. 1922.
Thompson, Albert E., Box 712, Blythe, Calif. 1923.
Thompson, Frederick, P. O. Box 720, Mill Valley, Calif. 1925.
Thompson, Mrs. H. F., 817 S. Spring St., Los Angeles, Calif. 1922.
Thompson, J. Walcott, 527 E. 1st S. St., Salt Lake City, Utah. 1918.
Thomson, Miss Isabel A., 5939 Shafter Ave., Oakland, Calif. 1918.
Thowless, Herbert L., 255 Fourth St., Newark, N. J. 1919.
Tindall, Charles W., 912 N. Noland St., Independence, Mo. 1920.
Todd, W. E. Clyde, Carnegie Museum, Pittsburgh, Pa. 1909.
Tonkin, George, Biol. Survey, Baker, Ore. 1920.
Torrey, Frederic C., 1 Canyon Road, Berkeley, Calif. 1921.
Townsend, Dr. Charles W., 98 Pinckney St., Boston, Mass. 1925.

Treganza, A. O., 522 S. 13th St. E., Salt Lake City, Utah. 1907.
Treganza, Mrs. A. O., 522 S. 13th St. E., Salt Lake City, Utah. 1915.
Trenor, Thomas, Hotel Congress, San Francisco, Calif. 1913.
Trescot, E. B., R.D. 4, Box 221, Petaluma, Calif. 1915.
Trost, Henry, 475 29th St., San Francisco, Calif. 1924.
Trumbull, J. H., 39 Farmington Ave., Plainville, Conn. 1911.
Turnbull, James Douglas, 2065 48th Ave. West, Vancouver, B. C. 1923.
*Tyler, John G., P. O. Box 173, Fresno, Calif. 1905 (1920).
Tyler, Dr. Winsor M., 522 Massachusetts Ave., Lexington, Mass. 1914.
Unglish, W. E., Gilroy, Calif. 1910.
Urner, Charles Anderson, 613 Cleveland Ave., Elizabeth, N. J. 1925.
Van Dellen, Daniel, 48 Maple St., Salinas, Calif. 1925.
§Van Rossem, Adriaan J., 514 Lester Ave., Pasadena, Calif. 1909.
*Van Straaten, H., Het Veldhuis, 8 Dennersweg, Velp, Holland. 1918 (1919).
Von Lengerke, Justus, 257 Highland Ave., Orange, N. J. 1925.
Varick, Wm. Remsen, San Marcus Bldg., Santa Barbara, Calif. 1923.
Vorhies, Prof. Chas. T., Univ. Ariz., Tucson, Ariz. 1916.
Wagner, Edward H., 527 San Joaquin St., Stockton, Calif. 1922.
Walker, Alex., Tillamook, Ore. 1911.
Walker, Ernest P., Biol. Survey, Juneau, Alaska. 1910.
Wanzer, James Olin, Piedmont Court, Santa Cruz, Calif. 1921.
Ward, F. H., 18 Grove Place, Rochester, N. Y. 1915.
Warmer, Charles A., 1310 Baker-Detwiler Bldg., Los Angeles, Calif. 1920.
Warmer, Mrs. Edna R., 1310 Baker-Detwiler Bldg., Los Angeles, Calif. 1921.
Warren, E. R., 1511 Wood Ave., Colorado Springs, Colo. 1909.
Waterhouse, John Thomas, care Alexander and Baldwin, Ltd., Honolulu, T. H. 1921.
Weber, J. A., 151 Grand Ave., Leonia, N. J. 1915.
Webster, Frederick S., 114 S. Bonnie Brae St., Los Angeles, Calif. 1925.
Werner, Miss Selma, 2085 Sacramento St., San Francisco, Calif. 1925.
Wegeforth, Dr. Harry M., 210 Maple St., San Diego, Calif. 1920.
Wegener, Miriam (Mrs. H. A.), 506 N. 3rd St., Alhambra, Calif. 1924.
Weiser, Charles S., 101 W. Springettsburg Ave., York, Pa. 1920.
Welch, L. W., 1845 Olive Ave., Long Beach, Calif. 1911.
Welsh, Joseph, Pasadena Hdw. Co., Pasadena, Calif. 1917.
Wetmore, Dr. Alexander, U. S. National Museum, Washington, D. C. 1909.
Wheeler, Mrs. J. W., 403 15th Ave. N., Seattle, Wash. 1912.
Wheeler, Roswell S., 4017 Everett Ave., Oakland, Calif. 1894.
White, Halsted G., 528 San Luis Road, Berkeley, Calif. 1914.
Whitney, Miss Margaret W., 1563 N. Raymond Ave., Pasadena, Calif. 1919.
Whittle, Charles L., 50 Congress St., Boston, Mass. 1922.
Widmann, Berthold, 4621 Wesley Ave., Los Angeles, Calif. 1923.
Widmann, O., 5105 Enright Ave., St. Louis, Mo. 1904.
Wilder, H. E., Carlotta, Humboldt Co., Calif. 1909.
Willard, B. G., 51 Fresh Pond Parkway, Cambridge, Mass. 1910.
*§Willard, F. C., Farmingdale, Long Island, N. Y. 1905.
Willett, Geo., Ketchikan, Alaska. 1905.
Williams, Robert W., Tallahassee, Fla. 1914.
Wilson, Rev. Francis M., Beaumont, Calif. 1921.
Wilson, Gordon, 1434 Chestnut St., Bowling Green, Ky. 1924.
Withey, George C., Deering, N. Dak. 1924.
Wolfe, Lieut. L. R., Fort Douglas, Salt Lake City, Utah. 1921.
Wood, Dr. Casey A., 7 West Madison St., Chicago, Ill. 1916.
Wood, Dr. Clifford H., Glendora, Calif. 1922.
Wood, Mrs. Mildred Tiffany, Hyampom, Trinity Co., Calif. 1921.
Wood, Norman A., Museum Zool., Ann Arbor, Mich. 1916.
Woodruff, Frank M., Chicago Acad. Sciences, Chicago, Ill. 1906.
Woodruff, Regina, Whittier College, Whittier, Calif. 1920.
Woods, Robert S., 919 S. Bonnie Brae, Los Angeles, Calif. 1920.
Woodward, C. H., 4129 Ingalls St., San Diego, Calif. 1920.
*Wright, Curtis, 2943 Avalon Ave., Berkeley, Calif. 1916 (1922).
§Wright, Frank S., 14 Cayuga St., Auburn, N. Y. 1910.
Wright, Howard W., 830 N. Orange Grove Ave., Pasadena, Calif. 1921.
Wright, William S., Nat. Hist. Museum, Balboa Park, San Diego, Calif. 1924.
*Wyman, L. E., Museum Hist., Sci. and Art, Los Angeles, Calif. 1908 (1920).
Wythe, Margaret W., Museum Vert. Zool., Berkeley, Calif. 1912.
Yost, Mrs. Myrtle K., 2831 N. Broadway, Los Angeles, Calif. 1923.
Zahn, Otto J., 2115 Estrella Ave., Los Angeles, Calif. 1896.
Zahn, Mrs. Francis M. Harmon, 2115 Estrella Ave., Los Angeles, Calif. 1912.
Zech, Miss Lillian, 335 W. Highland Ave., Redlands, Calif. 1916.
Zerlang, John, 524 W. Hawthorne St., Eureka, Calif. 1918.
Zerlang, Lawrence, 524 W. Hawthorne St., Eureka, Calif. 1918.
Zinn, Zola, 4002 39th St. S. W., Seattle, Wash. 1921.

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